Ms 5103/3. Eötvös Loránd magyar nyelvi

M. Barométer

Magyar Variáns

Magyarország + Németo.

mérések.

Németország.

Közép $\left\{\begin{array}{l}\lambda = 27^\circ \text{ és } \lambda' = 30^\circ \\ \varphi = 48^\circ \text{ és } \varphi' = 51^\circ\end{array}\right\}$ körüli

a nagy tükrökből átszámítva úgy hogy a tükrök

lemért adataiban $\frac{dl}{h}$ és Δ ostva lehet 2,97 d.

$\lambda = 29^\circ \qquad \varphi = 49^\circ 30\,m. \qquad c = 0{,}000227$

$\delta = 15^\circ 54' \qquad h = 1{,}902$.

$\alpha = 197^\circ \qquad \frac{dl}{h} = 0{,}000257$

$\beta = 87^\circ \qquad \Delta = 0{,}000145$

$$\frac{dl}{h}\sin(\alpha-\delta) - \Delta\cos(\beta-\delta) + c\sin\delta = -0{,}000004$$

$$-0{,}000005 - 0{,}000061 + 0{,}000062$$

$$\delta = \frac{dl}{h}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) - c\cos\delta = \underline{-0{,}000343}$$

$$-0{,}000257 + 0{,}000132 - 0{,}000218$$

magyarul.

$i = 66^\circ \qquad J = 0{,}000145 \qquad \gamma = 18^\circ$

$$\frac{1}{h}\frac{\partial^2 V}{\partial z\,\partial x} = \frac{dl}{h}\operatorname{tg} i\cos\alpha + \frac{J}{\cos^2 i}\cos\gamma = +282$$

$$-552 \qquad +834$$

$$\frac{1}{h}\frac{\partial^2 V}{\partial z\,\partial y} = -\frac{dl}{h}\operatorname{tg} i\sin\alpha - \frac{J}{\cos^2 i}\sin\gamma = -102$$

$$+169 \qquad -271$$

$\lambda = 3{,}0$

$\lambda = 31^\circ$

φ	δ	h	c (millim.)	α	$\frac{dl}{h}$ (millimetres)	β	Δ (millimetres)	millimetres $\frac{dl}{h}\sin(\alpha-\beta) - \Delta\cos(h-\beta) + C\sin\beta$	millimetres $s = \frac{dl}{h}\cos(\alpha-\beta) + \Delta\sin(h-\beta) - C\cos\beta$	i
49°20	15°9'	1,916	225	200°	213	82°	271	-19 -106 +58 -67	-212 +250 -217 -179	65°36
49°10	15°7'	1,921	224	198°	223	81	261	-12 -106 +58 -60	-223 +238 -216 -201	65°2
49°0	15°4'	1,928	223	180-198 182°	295	80	345	+67 -146 +57 -22	-287 +313 -215 -189	65°2
48°50	15°2'	1,942	222	201°	470	95	290	-49 -50 +57 -42	-467 +286 -213 -394	65°8
48°40	15°4'	1,948	220	220°	238	108°	210	-107 +11 +57 -39	-216 +210 -212 -218	64°5
48°30	15°7'	1,953	219	221°	223	106	161	-98 +3 +56 -39	-200 +161 -211 -250	64°4
48°15	15°9'	1,963	217	224°	213	98°	111	-103 -14 +56 -61	-186 +110 -210 -286	64°4
48°0	15°9	1,976	215	212°	256	86°	122	-75 -40 +56 -61	-245 +115 -208 -338	64°4
47°45	15°7.	1,982	213	196°	430	75°	132	-75 -66 +55 -86	-430 +114 -206 -522	64°2
47°30	15°4.	1,997.	211	194°	360	73°	132	+6 -70 +55 -9	-360 +112 -204 -452	64°1

	i	γ	millimm. J	millimm. $\frac{\gamma}{2\pi r^2} \int \sin i \cos i \cos(\gamma + \alpha) \, dt$	millimm. $\frac{\gamma}{2\pi r^2} \int \sin i \cos i \sin(\gamma + \alpha) \, dt$	
	$65°36'$	$16°$	174	-441 $+980$ $+539$	$+161$ -287 -120	
	$65°28'$	$17°$	62	-465 $+344$ -121	$+151$ -105 $+46$	
	$65°23'$	$16°$	148	-643 $+820$ $+177$	$+22$ -235 -213	
	$65°8'$	$22°$	261	-947 $+1368$ $+421$	$+364$ -553 -189	
	$64°58'$	$40°$	238	-390 $+1018$ $+628$	$+328$ -854 -526	
	$64°49'$	$48°$	161	-358 $+545$ $+297$	$+311$ -661 -350	
	$64°45'$	$50°$	46	-325 $+162$ -163	$+314$ -194 $+120$	
	$64°41'$	$42°$	110	-459 $+447$ -12	$+287$ -402 -115	
	$64°29'$	$20°$	145	-866 $+734$ -132	$+248$ -267 -19	
	$64°19'$	$15°$	110	-726 $+566$ -160	$+181$ -152 $+29$	

$\lambda = 31$	20	10	0	50	40	30	15	0	45	30.
$\lg \frac{H}{h}$	2,32838	2,34830	2,46982	2,67210	2,37658	2,34830	2,32838	2,40824	2,63347	2,55630
$\lg \lg i$	0,34331	0,34063	0,33893	0,33397	0,33067	0,32771	0,32640	0,32509	0,32118	0,31794
$\lg \frac{H}{h} \lg i$	2,67169	2,68893	2,80875	3,00607	2,70725	2,67601	2,65478	2,73333	2,95465	2,87424
$\lg \cos\alpha$	0,97299-1	0,97821	0,99974	0,97015	0,98725	0,87778	0,85693	0,92842	0,98284	0,98690
$\lg \frac{H}{h} \lg i \cos\alpha$	2,64468	2,66714	2,80849	2,97622	2,59150	2,55379	2,51171	2,66175	2,93749	2,86114
$\frac{H}{h} \lg i \cos\alpha$	- 441	- 465	- 643	- 947	- 390	- 358	- 325	- 459	- 866	- 726
$\lg \frac{H}{h} \lg i$	2,67169	2,68893	2,80875	3,00607	2,70725	2,67601	2,65478	2,73333	2,95465	2,87424
$\lg \sin\alpha$	0,53405-1	0,48998-1	0,54282-2	0,55433-1	0,80807-1	0,81694-1	0,89177	0,72421-1	0,44034-1	0,38368-1
$\lg \frac{H}{h} \lg i \sin\alpha$	2,20574	2,17891	1,35157	2,56040	2,51532	2,49295	2,49655	2,45754	2,39499	2,25792
$\frac{H}{h} \lg i \sin\alpha$	- 161	- 151	- 22	- 364	- 328	- 311	- 314	- 287	- 248	- 181
$\lg y$	2,24055	1,79239	2,17026	2,41664	2,37658	2,20683	1,66276	2,04139	2,16137	2,04139
$\lg \cos^2 i$	0,23212-1	0,23656-1	0,23932-1	0,24754-1	0,25298-1	0,25784-1	0,25998-1	0,26212-1	0,26850-1	0,27378-1
$\lg \frac{y}{\cos^2 i}$	3,00843	2,55583	2,93094	3,16910	3,12360	2,94899	2,40278	2,77927	2,89287	2,76761
$\lg \cos\gamma$	0,98284-1	0,98060	0,98284	0,96717	0,88425	0,82551	0,80807	0,87107	0,97299	0,98494-1
$\lg \frac{y}{\cos^2 i} \cos\gamma$	2,99127	2,53643	2,91378	3,13627	3,00785	2,77450	2,21085	2,65034	2,86586	2,75255
$\frac{y}{\cos^2 i} \cos\gamma$	980	344	820	1368	1018	595	162	447	734	566
$\lg \frac{y}{\cos^2 i}$	3,00843	2,55583	2,93094	3,16910	3,12360	2,94899	2,40278	2,77927	2,89287	2,76761
$\lg \sin\gamma$	0,44034-1	0,46594	0,44034	0,57358	0,80807	0,87108	0,88425	0,82551	0,53405	0,41300-1
$\lg \frac{y}{\cos^2 i} \sin\gamma$	2,44877	2,02177	2,37128	2,74268	2,93167	2,82007	2,28703	2,60478	2,42692	2,18061
$\frac{y}{\cos^2 i} \sin\gamma$	281	105	235	553	854	661	194	402	267	152

$\lambda = 29^\circ$	$\varphi = 50^\circ 30'$	50°	$49^\circ 45'$	$49^\circ 30'$	$49^\circ 15'$	49°	$48^\circ 30'$	48°	$47^\circ 30'$
$\log \frac{H}{h}$	2,35218	2,42651	2,52244	2,51720	2,11394	2,34242	2,45332	2,40824	2,32634
$\log \operatorname{tg} i$	0,36170	0,35928	0,35483	0,35074	0,34803	0,34465	0,33729	0,33001	0,32150
$\log \frac{H}{h} \operatorname{tg} i$	2,71388	2,78579	2,87727	2,86794	2,46197	2,68707	2,79061	2,73825	2,64784
$\log \cos\alpha$ —	0,99940-1	0,98872-1	0,98690-1	0,99993-1	0,99335-1	0,98284-1	0,98872-1	0,98284-1	0,98494-1
$\log \frac{H}{h} \operatorname{tg} i \cos\alpha$	2,71328	2,77451	2,86417	2,86787	2,45532	2,66991	2,77933	2,72109	2,63278
$\frac{H}{h} \operatorname{tg} i \cos\alpha$	− 517	− 595	− 731	− 738	− 285	− 468	− 602	− 526	− 429
$\log \frac{H}{h} \operatorname{tg} i$	2,71388	2,78579	2,87727	2,86794	2,46197	2,68707	2,79061	2,73825	2,64784
$\log \sin\alpha$ —	0,71880-2	0,35209-1	0,38368-1	0,24186-2	0,23967-1	0,44034-1	0,35209-1	0,44034-1	0,41300-1
$\log \frac{H}{h} \operatorname{tg} i \sin\alpha$	1,43268	2,13788	2,26095	1,10980	1,70164	2,12741	2,14270	2,17859	2,06084
$\frac{H}{h} \operatorname{tg} i \sin\alpha$	− 27	− 137	− 182	− 13	− 50	− 134	− 139	− 151	− 115
$\log J$	2,28556	2,18469	2,20683	2,10037	2,06446	2,12057	2,18469	2,16137	2,20683
$\log \cos^2 i$	0,20140-1	0,20546-1	0,21292-1	0,21976-1	0,22428-1	0,22988-1	0,24208-1	0,25406-1	0,26796-1
$\log \frac{J}{\cos^2 i}$	3,08416	2,97923	2,99391	2,88061	2,84018	2,89069	2,94261	2,90731	2,93887
$\log \cos f$	0,99040-1	0,99894-1	0,99675-1	0,98494-1	0,97299-1	0,99761-1	0,98494-1	0,98494-1	0,98060-1
$\log \frac{J}{\cos^2 i} \cos f$	3,07456	2,97817	2,99066	2,86555	2,81317	2,88830	2,92755	2,89225	2,91947
$\frac{J}{\cos^2 i} \cos f$	1187	951	978	734	650	773	846	780	831
$\log \frac{J}{\cos^2 i}$	3,08416	2,97923	2,99391	2,88061	2,84018	2,89069	2,94261	2,90731	2,93887
$\log \sin f$	0,31788-1	0,84358-2	0,08589-1	0,41300-1 —	0,53405-1 —	0,01923-1	0,41300-1	0,41300-1	0,46594-1
$\log \frac{J}{\cos^2 i} \sin f$	2,40204	1,82281	2,07980	2,29361 —	2,37423 —	1,90992	2,35561	2,32031	2,40481
$\frac{J}{\cos^2 i} \sin f$	252	66	120	− 197	− 237	81	227	209	254

$\lambda = 29^\circ \qquad \varphi = 49^\circ 15'$

$c = 0{,}000225$

$\frac{\Delta l}{h}$ hasonlóképpen számítva Δ kiírjuk.

$h = 1{,}902 \qquad \delta = 16^\circ 10$

$\alpha = 190^\circ \qquad \frac{\Delta l}{h} = 0{,}000130$

$\beta = 71^\circ \qquad \Delta = 0{,}000181$

$\frac{\Delta l}{h} \sin(\alpha - \delta) + c \cos\delta - \Delta \cos(\beta - \delta) = -0{,}000028$

$0{,}000014 \quad + 0{,}000062 \quad - 0{,}000104$

$\zeta = \frac{\Delta l}{h} \cos(\alpha - \delta) - c \cos\delta + \Delta \sin(\beta - \delta) = \underline{-0{,}000197}$

$-0{,}000129 \quad -0{,}000216 \quad +0{,}000148$

$\lambda = 29^\circ \qquad \varphi = 49^\circ$

$C = 0{,}000223$

$\frac{dl}{h}$ Quadratisch um Δ linear in $\sin\alpha$ ändern.

$h = 1{,}912 \qquad \delta = 16^\circ 5'$

$\alpha = 196^\circ \qquad \frac{dl}{h} = 0{,}000220$

$\beta = 83^\circ \qquad \Delta = 0{,}000161$

$$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta - \Delta\cos(\beta-\delta) = 0$$

$$0 \quad +0{,}000062 - 0{,}000062$$

$$\zeta = \frac{dl}{h}\cos(\alpha-\delta) - c\cos\delta + \Delta\sin(\beta-\delta) = -0{,}000281$$

$$-0{,}000220 \quad -0{,}000214 + 0{,}000147 =$$

$\lambda = 29°$ $\varphi = 48°\,30'$

$c = 0{,}000219$

$r = 1{,}940$ $\delta = 16°\,4'$

Δ in $\frac{dl}{r}$ mit hörigerlicher genauer.

$\alpha = 193°$ $\frac{dl}{r} = 0{,}000284$

$h = 86°$ $\Delta = 0{,}000145$

$$\frac{dl}{r}\sin(\alpha-\delta) + c\sin\delta - \Delta\cos(\varphi-\delta) = +0{,}000026$$

$+0{,}000013$ $+0{,}000062$ $-0{,}000049$

$$\frac{dl}{r}\cos(\alpha-\delta) - c\cos\delta + \Delta\sin(\varphi-\delta) = \underline{-0{,}000358}$$

$-0{,}000284$ $-0{,}000210$ $+0{,}000136$

$\lambda = 29^\circ \qquad \varphi = 48^\circ\ 0'$

Δ és $\frac{\Delta l}{h}$ közepes értékből

$c = 0{,}000215$

$\delta = 16^\circ 4' \qquad h = 1{,}952$

$\alpha = 196^\circ \qquad \frac{\Delta l}{h} = 0{,}000256$

$\beta = 80^\circ \qquad \Delta = 0{,}000138$

$$\frac{\Delta l}{h}\sin(\alpha-\delta) + c\sin\delta - \Delta\cos(\beta-\delta) = -0{,}000001$$
$$0 \qquad +0{,}000059 \qquad -0{,}000060$$

$$\zeta = \frac{\Delta l}{h}\cos(\alpha-\delta) - c\cos\delta + \Delta\sin(\beta-\delta) = -0{,}000338$$
$$-0{,}000256 \quad -0{,}000206 \quad +0{,}000124$$

$\lambda\ 29^\circ \qquad \varphi = 47^\circ 30'$

Δ és $\frac{\Delta l}{h}$ közepes értékből

$c = 0{,}000211$

$\delta = 15^\circ 54' \qquad c = 0{,}000211 \qquad h = 1{,}974$

$\alpha = 195^\circ \qquad \frac{\Delta l}{h} = 0{,}000212$

$\beta = 78^\circ \qquad \Delta = 0{,}000162$

$$\frac{\Delta l}{h}\sin(\alpha-\delta) - \Delta\cos(\beta-\delta) + c\sin\delta = -0{,}000014$$
$$4 \qquad -76 \qquad +58$$

$$\zeta = \frac{\Delta l}{h}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) - c\cos\delta = -273$$
$$-212 \qquad +142 \qquad -203$$

Bajorország: $\lambda = 29°$ $\varphi = 49°30$

1 m-en a kőhöjen mért 1,233 kőhúzás.

$$c = \frac{1{,}233}{6366}\operatorname{tg}\varphi = 0{,}0001937 \operatorname{tg}\varphi \qquad c_{49°30'} = 0{,}000227$$

Δ gondratiben feltüntetett, $\frac{\Delta l}{h}$ kőhúzatás,

φ	c
48°	0,0002215
49°	223
50°	231
51°	239

$h = 1{,}897$ $\delta = 16°10'$

$\alpha = 181°$ $\frac{\Delta l}{h} = 0{,}000329$

$\beta = 63°40'$ $\Delta = 0{,}000155$

$$\frac{\Delta l}{h}\sin(\alpha-\delta) + \Delta\cos(\beta-\delta) + c\sin\delta = 0{,}000044$$

$0{,}000086 \qquad 0{,}000195 \qquad 0{,}000063$

$$\frac{1}{h}\left(\frac{\partial\eta}{\partial\alpha} + \frac{\partial\xi}{\partial\beta}\right) = S = \frac{\Delta l}{h}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) - c\cos\delta = -0{,}000424$$

$-0{,}000317 \qquad +0{,}000110 \qquad -0{,}000218$

$\lambda = 29°$ $\varphi = 49° 45'$

$c = 0{,}000229$

Δ a ívnyomó körzetből harmadfokú formulával Δ

$\frac{dl}{h}$ mint körzeti ívig.

$h = 1{,}882$ $\delta = 16° 20$

$\alpha = 194°$ $\Delta = 0{,}000054$

$\beta = 70°$ $\frac{dl}{h} = 0{,}000333$

$$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta - \Delta\cos(\beta-\delta) =$$

$0{,}000016 \quad + 0{,}000063 \quad - 0{,}000032 \quad = +0{,}000046$

$$S = \frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2} + \frac{\partial^2 V}{\partial y^2}\right)^{\pm} = \frac{dl}{h}\cos(\alpha-\delta) - c\cos\delta + \Delta\sin(\beta-\delta) = -0{,}000510$$

$- 0{,}000333 \quad - 0{,}000220 \quad + 0{,}000043$

$\lambda = 29^\circ$ $\varphi = 50^\circ$

Δ $c = 0{,}000231$

$\frac{\Delta l}{h}$ mint közelítés

$h = 1{,}872$ $\delta = 16^\circ 20'$

$\alpha = 193^\circ$ $\frac{\Delta l}{h} = 0{,}000267$

$\beta = 78^\circ$ $\Delta = 0{,}000061$

$\frac{\Delta l}{h} \sin(\alpha - \delta) + c \sin\delta - \Delta \cos(\beta - \delta) = 0{,}000050$

$0{,}000015$ $0{,}000064$ $0{,}000029$

$\zeta = \frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2} + \frac{\partial^2 V}{\partial y^2}\right) = \frac{\Delta l}{h} \cos(\alpha - \delta) - c\cos\delta + \Delta \sin(\beta - \delta) = 0{,}000436$

$0{,}000267$ $0{,}000122$ $0{,}000053$

510

$\lambda = 29°$ $\varphi = 59°30'$

$c = 0{,}0002275$

Δ és $\frac{dl}{h}$ mint közbeiktatott állandók.

$h = 1{,}852$ $\delta = 16°20$

$\alpha = 183°$ $\frac{dl}{h} = 0{,}0002275$

$\beta = 80°$ $\Delta = 0{,}0001475$

$$\frac{dl}{h}\cos(\alpha-\delta) + c\sin\delta - \Delta\cos(\beta-\delta) = 0{,}0000052$$

$0{,}0002352$ $0{,}0000664$ $0{,}0000664$

$$S = \frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2} + \frac{\partial^2 V}{\partial y^2}\right) = \frac{dl}{h}\cos(\alpha-\delta) - c\cos\delta + \Delta\sin(\beta-\delta) = -0{,}0003717$$

$-0{,}0002218 - 0{,}0002279 + 0{,}0001380$

$\lambda = 28^0$

$\frac{\lambda = 28^\circ}{\varphi}$	δ	h	c	α	$\frac{H}{h}$
$50^\circ 30'$	$17^\circ 9'$	1,847	0,000235	201°	Extrapolátor xx 0,000242
$\underline{\underline{50^\circ}}$	$17^\circ 2'$	1,867	0,000231	198°	Körív 0,000214
$49^\circ 45$	$16^\circ 59'$	1,877	0,000229	198°	Körív 0,000242
$49^\circ 30$	$16^\circ 56'$	1,887	0,000227	199°	Körív 0,000302
$49^\circ 15$	$16^\circ 54'$	1,897	0,000225	208°	Körív 0,000210
$\underline{\underline{49^\circ 0'}}$	$16^\circ 52'$	1,905	0,000223	203°	Körív 0,000229
$48^\circ 30'$	$16^\circ 48'$	1,927	0,000219	190°	Körív 0,000288
$\underline{\underline{48^\circ 0'}}$	$16^\circ 44'$	1,947	0,000215	194°	Körív 0,000205
$47^\circ 30'$	$16^\circ 39'$	1,967	0,000211	194°	Körív 0,000254

	β	$\triangle$	I Millionen η $\frac{\eta}{k}\sin(\alpha-\delta)-\Delta\cos(\beta-\delta)+c\sin\delta$	Millionen η $S=\frac{\eta}{k}\cos(\alpha-\delta)+\Delta\sin(\alpha-\delta)-c\cos\delta$
	87°	Küsj. 0,000162	x +17 −71 +70 " +18	x −242 +146 −225 " −321
	80°	K 0,000145	−4 −66 +69 " +1	−204 +129 ~~−220~~ −221 −306
	79°	K. 0,000157	−4 −71 +68 " −7	~~−2[illegible]~~ −242 +140 ~~−218~~ −219 " −321
	80°	K. 0,000145	−10 −65 +67 " −8	~~−316~~ −302 +129 −217 −390
	80°	K. 0,000126	−40 −56 +65 " −41	−206 +112 −215 −309
	80°	K. 0,000131	−23 −59 +64 " −18	−228 +116 −213 −325
	87°	K. 0,000162	+25 −71 +69 " +27.	−286 +146 −210 −350
	83°	K. 0,000138	+11 −56 +61 " +16	−205 +126 −206 −285
	78°	K. 0,000138	+12 −66 +60 " +6	−254 +125 −202 −331

i	γ	J	m' Millimeter $\frac{1}{\lambda}\frac{\partial^2 V}{\partial x \partial z} = \frac{\lambda}{2}\frac{\pi}{\varepsilon}\frac{\varepsilon}{\sin i}\cos\gamma + \frac{\lambda}{2}\frac{\pi}{\varepsilon}\frac{\varepsilon}{\sin i}\sin\gamma$	Millimeter $\frac{1}{\lambda}\frac{\partial^2 V}{\partial y \partial z} = -\frac{\lambda}{2}\frac{\pi}{\varepsilon}\frac{\varepsilon}{\sin i}\sin\gamma + \frac{\lambda}{2}\frac{\pi}{\varepsilon}\frac{\varepsilon}{\sin i}\cos\gamma$	
67°	18°	0,000 223	− 532 + 1389 + 857	+ 204 − 451 − 247	
66°29'	15°	161	− 468 + 977 + 509	+ 152 − 262 − 110	
66°20'	17°	138	− 525 + 819 + 294	+ 171 − 250 − 79	
66°9'	16°	138	− 646. + 811 + 165	+ 222 − 232 − 10	
65°57'	0°	138	− 416. + 831 + 415	+ 221 ± 000 + 221	
65°46'	21°	161	− 468 + 893 + 425	+ 199 − 343 − 144	
65°25'	15°	132	− 620 + 737 + 117	+ 109 ± 197 − 88	
65°3'	16°	161	− 427 + 870 + 443	+ 107 ± 249 ± 142	
64°49'	20°	170	− 524 + 883 + 359	+ 131 ± 321 ± 191	

$\alpha=28^\circ$	$50^\circ 30'$	50°	$49^\circ 45'$	$49^\circ 30'$	$49^\circ 15'$	49°	$48^\circ 30'$	48°	$47^\circ 30'$
$\lg \frac{H}{h}$	2,38382 532	2,33041 468	2,38382 525	2,48001 646	2,32222 416	2,35984 468	2,45939 620	2,31175 427	2,40483 524
$\lg \lg i$	0,37215	0,36135	0,35825	0,35448	0,35040	0,34667	0,33962	0,33232	0,32771
$\lg \frac{H}{h} \lg i$	2,75597	2,69176	2,74207	2,83449	2,67262	2,70651	2,79901	2,64407	2,73254
$\lg \cos\alpha$	0,97015-1	0,97821-1	0,97821-1	0,97567-1	0,94593-1	0,96403-1	0,99335-1	0,98690-1	0,98690-1
$\lg \frac{H}{h} \lg i \cos\alpha$	2,72612	2,66997	2,72028	2,81016	2,61855	2,67054	2,79236	2,63097	2,71944
$\lg \frac{H}{h} \lg i$	2,75597	2,69176	2,74207	2,83449	2,67262	2,70651	2,79901	2,64407	2,73254
$\lg \sin\alpha$	0,55433-1	0,48998-1	0,48998-1	0,51264-1	0,67161-1	0,59188-1	0,23967-1	0,38368-1	0,38368-1
$\lg \frac{H}{h} \lg i \sin\alpha$	2,31030	2,18174	2,23205	2,34713	2,34423	2,29839	2,03868	2,02775	2,11622
$\frac{H}{h} \lg i \sin\alpha =$	−204	−152	−171	−222	−221	−199	−109	−107	−131
$\lg J$	2,34830	2,20683	2,13988	2,13988	2,13988	2,20683	2,12057	2,20683	2,23045
$\S \cos^2 i$	0,18376-1	0,20198-1	0,20718-1	0,21350-1	0,22032-1	0,22596-1	0,23822-1	0,25026-1	0,25736-1
$\lg \frac{J}{\cos^2 i}$	3,16454	3,00485	2,93270	2,92638	2,91956	2,98087	2,88235	2,95657	2,97375
$\S \cos\S$	0,97821-1	0,98494-1	0,98080-1	0,98284-1	0,00000	0,97615-1	0,98494-1	0,98284-1	0,97299-1
$\lg \frac{J}{\cos^2 i} \cos\S$	3,14275	2,98979	2,91330	2,90922	2,91956	2,95102	2,86729	2,93941	2,94614
$\frac{J}{\cos^2 i} \cos\S$	1389	977	819	811	831	893	737	870	883
$\lg \frac{J}{\cos^2 i}$	3,16454	3,00485	2,93270	2,92638	2,91956	2,98087	2,88235	2,95657	2,97375
$\S \sin\S$	0,48998-1	0,41300-1	0,46594-1	0,44034-1	0,	0,55433-1	0,41300-1	0,44034-1	0,53405-1
$\lg \frac{J}{\cos^2 i} \sin\S$	2,65452	2,41785	2,39864	2,36672		2,53520	2,29535	2,39671	2,50710
$\frac{J}{\cos^2 i} \sin\S$	451	262	250	233	0,0000	343	197	249	321

$\lambda = 28^\circ 30'$

$\lambda = 28°30'$ φ	δ	h	c	α	$\frac{dl}{h}$
50°30	16°34'	~~1,882~~ ~~1,882~~ 1,850	0,000235	192°	kůry 0,000246
50°	16°30'	1,868	0,000231	182°	kůry 237 0,000
49°45	16°26'	1,880	0,000229	195°	kůry 0,000322
49°30	16°26'	1,896	0,000227	202°	kůry 0,000340
49°15	16°26'	1,903	0,000225	212°	kmen d'arbres à écorce 0,000172
49°	16°22'	1,910	0,000223	201°	dito 0,000172
48°30	16°18'	1,930	0,000219	192°	0,000285
48°	16°16'	1,952	0,000215	195°	0,000244
47°30	16°12.	1,972.	0,000211	195°	0,000216

β	Δ	Mittwoch. $\frac{dl}{h}\sin(\alpha-\delta) - \Delta\cos(\beta-\delta) + c\sin\delta$	Mittwoch $\zeta = \frac{dl}{h}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) - c\cos\delta$
80°	0,000153	19 −68 +67 = +18	−246 +127 −226 = −335
78°	0,000161	~~56~~ −77 +66 = +~~45~~	~~−227~~ +142 −222 = ~~−307~~ −307
87°	0,000171	8 −57 +65 = +16	−322 +160 −220 = −382
90°	0,000145	−32 −33 +65 = 0	−329 +140 −219 = −418
90°	0,000162	−45 −45 +64 = −26	−165 +155 −216 = −226
80°	0,000162	−14 −~~32~~ +63 = −~~23~~	−172 +146 −215 = −241
83°	0,000176	+17 −46 +62 = −~~33~~	−234 +112 −211 = −333
83°	0,000178	+5 −55 +61 = +11	−244 +127 −208 = −325
75°	0,000178	+12 −72 +60 = 0	−216 +117 −203 = −302

λ	γ	T	$\lambda_{\text{mért}} - \lambda_{\text{számított}} = \frac{\lambda}{2\pi} \sin 2\gamma$	$\lambda_{\text{mért}} - \lambda_{\text{számított}} = \frac{\lambda}{2\pi} \cos^2\gamma \sin 2\gamma_1$	$\lambda_{\text{mért}} - \lambda_{\text{számított}} = \frac{\lambda}{2\pi} \sin^2\gamma \sin 2\gamma_2$
$65^\circ 52'$	$+17^\circ$	$0{,}000$	-56	$+120$	
			$+128$	-93	
		20τ	$+122$	-213	
$66^\circ 25'$	$+15^\circ$	17τ	-52	$+19$	
			$+82$	-21	
			$+284$	-202	
$66^\circ 14'$	$+18^\circ$	16τ	-70	$+189$	
			$+99$	-305	
			$+293$	-119	
$66^\circ 2$	$+38^\circ$	18τ	-209	$+256$	
			$+86$	-675	
			$+155$	-389	
$64^\circ 35'$	$+18$	16τ	-993	$+102$	
			$+856$	-272	
			$+393$	-120	
$65^\circ 0$	$+13$	17τ	-285	$+135$	
			$+191$	-183	
			$+286$	-98	
$65^\circ 23$	19°	17τ	-502	$+107$	
			$+735$	-188	
			$+253$	-71	
$65^\circ 40'$	8°	18τ	-337	$+136$	
			$+1056$	-192	
			$+701$	-12	
$65^\circ 53'$	$+20^\circ$	15τ	-326	$+204$	
			$+792$	-958	
			$+967$	-257	

$\lambda = 28°30$	50°30	50°	49°45	49°30	49°15	49°	48°30	48°	47°30
$\lg \frac{H}{h}$	2,39094	2,37475	2,50786	2,53148	2,23553	2,23557	2,37107	2,38709	2,33445
$\lg t_{gi}$	0,37004	0,35997	0,35619	0,35210	0,34904	0,34465	0,33896	0,33133	0,32313
$\lg \frac{H}{h} t_{gi}$	2,76098	2,73472	2,86405	2,88358	2,58457	2,58018	2,71003	2,71872	2,65758
$\lg \cos\alpha$	0,99040 −1	0,99974 −1	0,98494 −1	0,96717 −1	0,92842 −1	0,97015 −1	0,99040 −1	0,98494 −1	0,98872 −1
$\lg \frac{H}{h} t_{gi} \cos\alpha$	2,75138	2,73446	2,84899	2,85075	2,51299	2,55033	2,70043	2,70366	2,64630
$\frac{H}{h} t_{gi} \cos\alpha$	− 564,1	−542,6	−706,3	−709,2	− 325,8	− 355,1	− 501,7	− 505,4	− 442,9
$\lg \frac{H}{h} t_{gi}$	2,76098	2,73472	2,86405	2,88358	2,58457	2,58018	2,71003	2,71872	2,65758
$\lg \sin\alpha$	0,31788 −1	0,54282 −2	0,41300 −1	0,57258 −1	0,72421 −1	0,55423 −1	0,31788 −1	0,41300 −1	0,35209 −1
$\lg \frac{H}{h} t_{gi} \sin\alpha$	2,07886	1,27754	2,27705	2,45716	2,30878	2,13451	2,02791	2,13172	2,00967
$\frac{H}{h} t_{gi} \sin\alpha$	− 119,9	− 18,9	−189,3	− 286,5	− 203,6	−136,3	− 106,7	− 135,4	−102,3
$\lg J$	2,31597	2,13672	2,20952	2,25768	2,18469	2,25768	2,13033	2,16137	2,20952
$\lg \cos^2 i$	~~0,92740 4~~ 0,78732 −1	0,20430 −1	0,21064 −1	0,21750 −1	0,22258 −1	0,22988 −1	0,23932 −1	0,25190 −1	0,26532 −1
$\lg \frac{J}{\cos^2 i}$	3,12865	2,93242	2,99888	3,04018	2,96211	3,02780	2,89101	2,90947	2,94420
$\lg \cos\gamma$	0,98060 −1	0,98494 −1	0,97821	0,89653	0,93753	0,99575	0,98690	0,98872	0,97821
$\lg \frac{J}{\cos^2 i} \cos\gamma$	3,10925	2,91736	2,97709	2,93671	2,89964	3,02355	2,87791	2,89819	2,92241
$\frac{J}{\cos^2 i} \cos\gamma$	1286,0	826,7	948,6	864,4	792,7	1056,0	755,0	791,0	836,4
$\lg \frac{J}{\cos^2 i}$	3,12865	2,93242	2,99888	3,04018	2,96211	3,02780	2,89101	2,90947	2,94420
$\lg \sin\delta$	0,46594 −1	0,41300	0,48998	0,78924	0,69897	0,14356	0,28368	0,35209	−0,48998
$\lg \frac{J}{\cos^2 i} \sin\delta$	2,59459	2,34542	2,48886	2,82952	2,66108	2,17136	2,27469	2,26156	2,43418
$\frac{J}{\cos^2 i} \sin\gamma$	392,2	221,5	308,2	675,3	458,2	148,4	188,2	182,6	271,8

$\lambda = 29^\circ\ 30'$

$\lambda = 29^\circ 30'$

φ	δ	h	c	α	$\frac{u}{h}$	
$50^\circ\ 30'$	$16^\circ 4'$	~~1,912~~ 1,852	0,000235	192°	Közép. a két 0,000208	8
50°	$16^\circ 4'$	1,874	0,000231	196°	k. 2. 0,000305	8
$49^\circ\ 45'$	$16^\circ 0'$	1,887	0,000229	191°	Közép 0,000256	7
$49^\circ\ 30'$	$15^\circ 55'$	1,898	0,000227	180°	Közép 0,000277	71°
$49^\circ 15'$	$15^\circ 51'$	1,907	0,000225	177°	harmadfokú kerekítés 0,000165	80°
49°	$15^\circ 50'$	1,917	0,000223	194°	Közép. 0,000243	87°
$48^\circ\ 30'$	$15^\circ 50'$	1,927	0,000219	192°	Közép 0,000286	81°
48°	$15^\circ 45'$	1,959	0,000215	195°	Közép 0,000255	70°
$47^\circ 30'$	$15^\circ 34$	1,980	0,000211	198°	Közép 0,000253	85

β	Δ	Mittlerer Fehler $\frac{dl}{h}\sin(\alpha-\delta)-\Delta\cos(\beta-\delta)+c\sin\delta$	Mittlerer Fehler $\frac{dl}{h}\cos(\alpha-\delta)+\Delta\sin(\beta-\delta)-c\cos\delta$
$83^\circ 40'$	Közép 0,000176	+14 −67 +65 = +12.	−208 +163 −225 = −270
$88^\circ 0'$	Közép 0,000242	0 −75 +64 = −11	−305 +230 −221 −296
74°	Közép 0,000264	22 +140 +63 −55	−255 +225 −219 = −249
$71^\circ 40'$	harmadfokú simítás 0,000156	75 −89 +63 +49	−266 +129 −218 = −345
$80^\circ 0'$	harmadfokú simítás 0,000121	53 −53 +62 +62	−156 +109 −215 = −262
$87^\circ 0'$	Közép 0,000121	8 −18 +62 +52	−243 +119 −214 = −338
$81^\circ 0'$	Közép 0,000121	17 −51 +61 = +27	−286 +110 −211 = −387
$70^\circ 0'$	Közép 0,000200	2 −107 +60 −45	−255 +162 −207 = −300
85	0,000181	−11 −63 60 = −14	−253 +170 −203 = −286

λ	γ	γ	$\frac{\partial^2 x}{\partial \lambda^2} + \cos\gamma \cdot \frac{1}{\cos\gamma} \frac{\partial x}{\partial \lambda} \cdot \frac{\partial \gamma}{\partial \lambda} =$	$\frac{\partial^2 \gamma}{\partial \lambda^2} + \sin\gamma \cdot \cos\gamma \left(\frac{\partial x}{\partial \lambda}\right)^2 =$	
		0'0"0	−976	+107	
			+1196	−341	
65°42'	20°	138	+345"	−800	
66°49'	16°	193	+716	−240	
66°21	10°	152	−676	+169	
			+900	−164	
			+254	+5"	
66°01'	4°	138	−576	+111	
			+842	−54	
			+2744	+52	
66°01'	10°	161	−622	0	
			+958	−169	
			+336	−169	
6 6°26	8°	161	−503	+162	
			+858	−120	
			+354	+97	
61°58	12°	161	−522	+141	
			+866	−263	
			+333	−122	
65°15'	15°	161	−602	+129	
			+887	−222	
			+280	−93	
65°52	16°	170	−520	+130	
			+959	−275'	
			+939	−195'	
65°42	20°	138	+345'	−500	
			+311	−287	
66°49'	16°	193	+1196	−341	
			+716	−240	
66°21	10°	152	−676	+169	
			+900	−164	
			+254	+5"	
66°01'	4°	138	−576	+111	
			+842	−54	
			+2744	+52	
66°01'	10°	161	−622	0	
			+958	−169	
			+336	−169	
6 6°26	8°	161	−503	+162	
			+858	−120	
			+354	+97	
61°58	12°	161	−522	+141	
			+866	−263	
			+333	−122	
65°15'	15°	161	−602	+129	
			+887	−222	
			+280	−93	

$\lambda = 29^\circ 30'$	$50^\circ 30$	50°	$49^\circ 45'$	$49^\circ 30'$	$49^\circ 15^\circ$	49°	$48^\circ 30'$	48°	$47^\circ 30'$
$\lg \frac{dl}{h}$	2,31806	2,48430	2,40824	2,44248	2,21748	2,38561	2,45607	2,40654	2,40012
$\lg t_{gi}$	0,06690	0,35860	0,05483	0,35142	0,04701	0,04364	0,03629	0,03067	0,32020
$\lg \frac{dl}{h} t_{gi}$	2,68496	2,84290	2,76307	2,79390	2,56449	2,72925	2,79266	2,73721	2,72332
$\lg \cos\alpha$	0,99046 −1	0,98690 −1	0,99195 −1	0,00000	0,99940 −1	0,98690 −1	0,99040 −1	0,98494 −1	0,97821 −1
$\lg \frac{dl}{h} t_{gi} \cos\alpha$	2,67536	2,82980	2,75502	2,79390	2,56389	2,71615	2,78306	2,72215	2,70153
$\frac{dl}{h} t_{gi} \cos\alpha$	− 474	− 676	− 569	− 622	− 366	− 520	− 607	− 527	− 503
$\lg \frac{dl}{h} t_{gi}$	2,68496	2,84290	2,76307	2,79090	2,56449	2,72925	2,79266	2,73721	2,72332
$\lg \sin\alpha$	0,31788 −1	0,38368 −1	0,28060 −1	0,	+ 0,71880 −2	0,38368 −1	0,31788 −1	0,41300	0,48998
$\lg \frac{dl}{h} t_{gi} \sin\alpha$	2,00284	2,22658	2,04367		2,28329	2,11293	2,11054	2,15021	2,21330
$\frac{dl}{h} t_{gi} \sin\alpha$	− 101	− 169	− 111	0,000	+ 19	− 130	− 129	− 141	− 167
$\lg J$	2,28556	2,18184	2,13988	2,20683	2,13988	2,23045	2,20683	2,20683	2,20683
$\lg \cos^2 i$	0,19264 −1	0,20662 −1	0,21292 −1	0,21862 −1	0,22596 −1	0,23156 −1	0,24372 −1	0,25298 −1	0,26956
$\lg \frac{J}{\cos^2 i}$	~~3,47820~~ 3,09292	2,97522	2,92696	2,98821	2,91392	2,99889	2,96311	2,95385	2,93727
$\lg \cos\gamma$	0,98284 −1	0,99035 −1	0,99894 −1	0,99035 −1	0,97299 −1	0,98284 −1	0,98494 −1	0,98060 −1	0,99575 −1
$\lg \frac{J}{\cos^2 i} \cos\gamma$	3,07576	2,96857	2,92590	2,98156	2,88691	2,98173	2,94805	2,93445	2,93302
$\frac{J}{\cos^2 i} \cos\gamma$	1190	930	843	958	771	959	887	860	857
$\lg \frac{J}{\cos^2 i}$	3,09292	2,97522	2,92696	2,98821	2,91392	2,99889	2,96311	2,95385	2,93727
$\lg \sin\gamma$	0,44034 −1	0,22967 −1	0,84358 −2 ×	0,22967 −1	0,53405 −1	0,44034 −1	0,38364 −1	0,46594 −1	0,14356 −1
$\lg \frac{J}{\cos^2 i} \sin\gamma$	2,53326	2,21489	1,77054 ×	2,22788	2,44797	2,43923	2,34675	2,41979	2,08089
$\frac{J}{\cos^2 i} \sin\gamma$	341	164	~~59~~ 59	169	284	275	222	263	120

$\lambda = 29^\circ$

$\lambda = 29°$

φ	δ	h	c	α	$\frac{\mu}{h}$	β	Δ
$49°\,15'$	$16°\,10'$	$1{,}902$	$0{,}998235$	$183°$	$0{,}998225$	$80°$	$0{,}998145$
$49°$	$16°\,5'$	$1{,}912$	$0{,}998223$	$196°$	$0{,}998220$	$80°$	$0{,}998161$
$48°\,30'$	$16°\,4$	$1{,}9140$	$0{,}998249$	$192°$	$0{,}998228$	$82°$	$0{,}998145$
$58°$	$16°\,26$	$1{,}872$	$0{,}998131$	$192°$	$0{,}998267$	$78°$	$0{,}998061$
$57°\,30'$	$16°\,26'$	$1{,}8752$	$0{,}998235$	$196°$	$0{,}998215$	$80°$	$0{,}998145$
$49°\,30'$	$16°\,16'$	$1{,}8912$	$0{,}998227$	$181°$	$0{,}998229$	$63°\,40$	$0{,}998015$
$49°$	$15°\,54$	$1{,}914$	$0{,}998211$	$192°$	$0{,}998212$	$78°$	$0{,}998162$

$\varphi = 57°\,30' + 5 \cdot 49°\,5' - (5-4)\,49°\,30' = 58°\,30'$

Mittelwert

Millimeter $\frac{H}{\lambda}\sin(\vartheta-\delta)-\Delta\cos\psi(\vartheta-\delta)+c\sin\delta$	Millimeter $S=\frac{H}{\lambda}\cos\vartheta(\sin\psi+\sin(\vartheta-\psi))$			i	γ	Millimeter J	Millimeter $\frac{1}{4}\frac{\partial^2 V}{\partial x^2}\cdot\frac{x}{r}+\frac{1}{4}\frac{\partial^2 V}{\partial x\,\partial z}\cdot\frac{z}{r}$	Millimeter $\frac{1}{4}\frac{\partial^2 V}{\partial x\,\partial z}\cdot\frac{x}{r}+\frac{1}{4}\frac{\partial^2 V}{\partial z^2}\cdot\frac{z}{r}$
+52 +64 +64 +52	−218 ~~−220~~ +130 ~~+1000~~ −229 −317			66°30′	12°	193	−577 +1187 +670	+27 −252 −225
15 −29 +64 +50	−267 +53 −222 −436			66°23′	4°	153	−595 +951 +364	+127 −66 +71
16 −32 +63 +46	−222 +43 −220 −510			66°10′	7°	161	−721 +978 +267	+182 −120 +62
+86 +905 +63 +44	−217 +110 −218 −424			65°58	−15°	126	−708 +734 −4	+13 +197 +210
14 −104 +62 −28	−129 +148 −216 −197			65°50	−20°	116	−285 +650 +365	+50 +207 +287
0 −62 +62 0	−220 +147 −214 −281			65°40	+6°	132	−468 +773 +305	+104 −81 +53
13 −49 +62 +26	−284 +136 −210 −358			65°18	15°	153	−602 +846 +244	+129 −227 −88
0 −60 +54 −1	+256 +124 −206 −338			64°56	15°	145	−526 +780 +254	+151 −209 −58
4 −76 +58 −14	−212 +142 −203 −273			64°20	17°	161	−729 +831 +402	+115 −252 −137

52°	+32	+37	−93	+72
	−72	−39	−167	+97
	+23			
	−72	−75	−81	−2
	+34	+117	+176	+87
49°	+18	+102	+62	+5

48°	+58	+18	+5	+73
	−12	+71	+70	+52
	−7	+10	+15	−74

28° 29° 30°

$S - S_n$ ядерное
эл. взаимодействие
$S_n = -0{,}0003 Mc^2$

Francia Zielkopie

$c_{47} = 0{,}000570$ $c_{48} = 0{,}000517$ $c_{49} = 0{,}000532$ $c_{50} = 0{,}000513$

$$\frac{dl}{h}\sin(\alpha-\delta) - \Delta\cos(\beta-\delta) + c\sin\delta$$

1 hely. szelen 48° 28' hosszú 22' nyíltra. 0,000291

$\beta = -55°$ $\delta = 15°45'$ $\Delta = \frac{10.}{15} = 6{,}66 = 0{,}000194$.

$\alpha = 170°$ $h = 0{,}196$ $dl = \frac{0{,}000}{3{,}6.} = 0{,}000277$

$\frac{dl}{h}\sin(\alpha-\delta) - \Delta\cos(\beta-\delta) + c\sin\delta$ $+0{,}000114$

$0{,}000614 - 0{,}000648 + 0{,}000014 = -0{,}000020$.

2) hely szelény 49° 41' hosszú 0.

$\beta = 90°$ $\delta = 15°40'$ $\Delta = \frac{0{,}00291}{3{,}8} = 0{,}000777$

$\alpha = 182°$ $h = 0{,}195$ $dl = \frac{0{,}001}{4{,}5} = 0{,}000222$

$0{,}000269 - 0{,}000208 + 0{,}000143 = 0{,}000204$.

Szabályos Transzformáció a Pécsi

$c_{48} = 0{,}00185$

$\beta = 75°$ $\delta = 16°.$ $\Delta = \frac{6.0{,}00291}{14{,}5} = 0{,}00120$

$\alpha = 196\frac{1}{2}°$ $h = 0{,}191$ $dl = \frac{0{,}005}{11{,}5} = 0{,}000434$.

$0 - 0{,}000678 + 0{,}000405 =$

$+0{,}000510$

1890iki kötet.

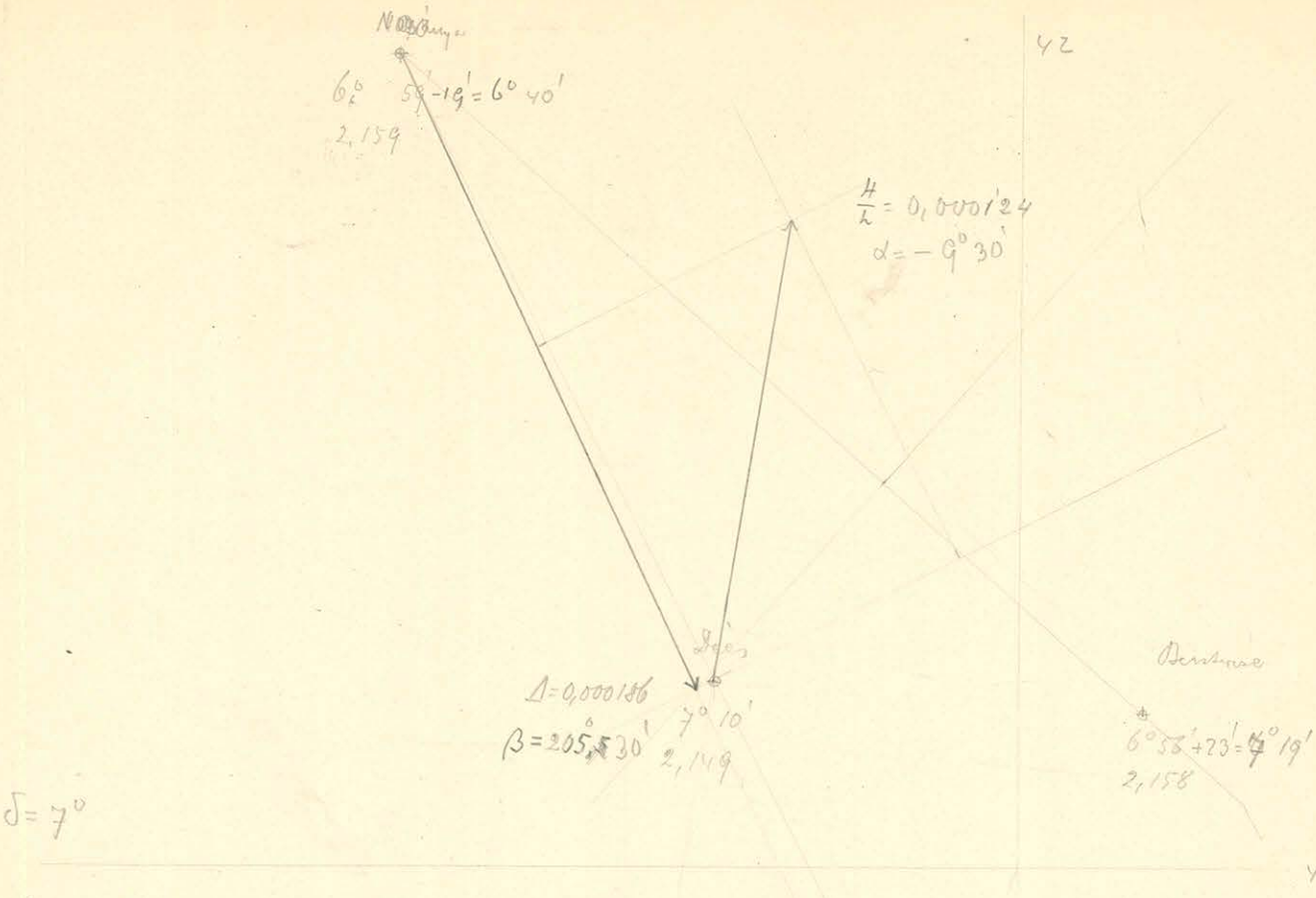
B 100 oldalon való kötés után.

Párisra a kötés.

A földmágnességi elemek 1890.0 epochára átszámított értékei.

	Állomás	Szélesség	Hosszúság Ferrotól	Elhajlás	Lehajlás	Vízsz. erősség	"Összes erő"
1.	Ó Gyalla	47° 53'	35° 51.5	8° 20.7	62° 49.2	2.0968	4.5903.
2.	Pannonhalma	47 33	35 26	8 32.3	62 38.6	2.1067	4.5845
3.	Veszprém	47 5.5	35 34.5	8 31.1	62 4.8	2.1328	4.5549
4.	Kalocsa	46 32	36 38	8 1.5	61 41.1	2.1608	4.5555
5.	Zimony	44 50.5	38 5.5	7 18.3	60 4.9	2.2385	4.4881
6.	Fehértemplom	44 52	39 5.5	7 6.2	59 54.8	2.2567	4.5016
7.	Herény	47 16	34 16	9 22.8	62 44.8	2.1016	4.5894
8.	Sopron	47 41	34 16	—	62 48.3	2.0930	4.5797
9.	Zágráb	45 49	33 39	9 29.0	61 15.9	2.1750	4.5241
10.	Karlovácz	45 29.5	33 13	9 31.6	61 1.8	2.1883	4.5180
11.	Szisszek	45 29	34 2.5	9 19.7	60 59.6	2.1853	4.5066
12.	Uj-Gradiska	45 16	35 6	8 47.5	60 37.1	2.2105	4.5055
13.	Vukovár	45 9	35 40.5	8 33.9	60 30.2	2.2215	4.5118
14.	Eszék	45 33	36 23	8 17.8	60 46.7	2.2111	4.5292
15.	Pécs	46 4	35 53.5	8 19.2	61 16.5	2.1858	4.4580.
16.	Losonez	48 19.5	37 20	7 27.3	63 3.4	2.0841	4.5996
17.	Selmeczbánya	48 27	36 34	8 17.3	63 14.4	2.0683	4.5936
18.	Trencsén	48 54	35 42.5	—	63 38.8	2.0504	4.6190
19.	Liptó sz. Miklós	49 5	37 17	7 30.2	63 34.5	2.0610	4.6312
20.	Késmárk	49 8	38 6.	7 14.3	63 35.7	2.0551	4.6212

	Állomás	Szélesség	Hosszúság Ferrotól	Elhajlás	Lehajlás	Viszonyszám	Súlyos eső
21.	Kassa	48° 43′	38° 55.5	6° 44.8	63 13.5	2. 0808	4. 6190
22.	Eger	47 54	38 2	7 13.3	62 40.2	2. 1075	4. 5904
23.	Budapest	47 30	36 41.5	7 56.8	62 27.9	2. 1181	4. 5817
24.	Szolnok	47 10.5	37 51	7 33.4	62 5.5	2. 1399	4. 5719
25.	Nagy-Várad	47 3.5	39 36	6 36.8	61 51.8	2. 1585	4. 5774
26.	Debreczen	47 32.5	39 17.5	6 47.4	62 15.6	2. 1462	4. 6110
27.	Ungvár	48 37	39 58	6 27.5	63 10.1	2. 0834	4. 6157
28.	Nagybánya	47 39.5	41 15	5 36.9	62 4.8	2. 1593	4. 6084
29.	Kolozsvár	46 46	41 15	5 58.2	61 33.7	2. 1771	4. 5717
30.	Maros-Vásárhely	46 32.5	42 14	5 39.7	61 20.7	2. 1914	4. 5699
31.	Segesvár	46 13.5	42 28	6 27.2	60 58.3	2. 2207	4. 5765
32.	Nagy Szeben	45 47.5	41 49	5 47.4	60 8.6	2. 2669	4. 5535
33.	Fogaras	45 50.5	42 38.5	5 31.3	60 31.9	2. 2297	4. 5324
34.	Gyula-Fehérvár	46 4.5	41 15	5 37.7	60 46.1	2. 2302	4. 5669
35.	Temesvár	45 45	38 54	7 5.8	60 49.5	2. 2083	4. 5290
36.	Karánsebes	45 24	39 53	6 37.3	60 16.1	2. 2420	4. 5207
37.	Orsova	44 42	40 4	6 38.5	59 39.0	2. 2697	4. 4920
38.	Szegedi	46 14.5	37 48	7 29.7	61 20.2	2. 1813.	4. 5476.



$\delta = 7°$

47

$\frac{H}{\lambda}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$

– [illegible] –

$-0,0000414 \quad -0,000177$

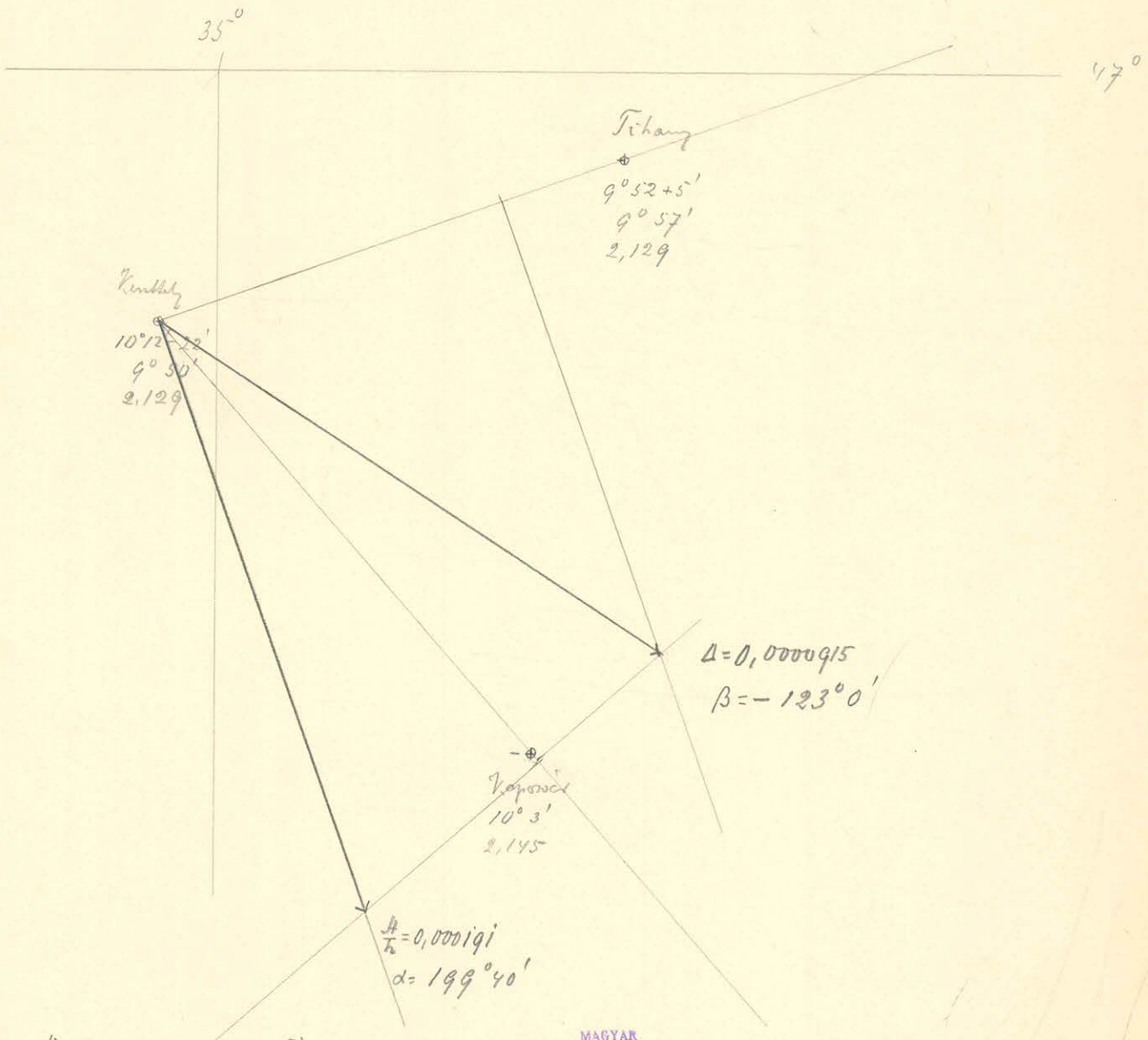
$S = \frac{H}{\lambda}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) = +0,000060$

$0,000124 \cdot 0,96 - 0,000186 \cdot 317$

$S_n = -0,000270$

$S' = S - S_n = +0,000330$

Kenthly Titany Voprovci (Neppseres)



$\delta = 10°$

$\frac{A}{\lambda}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$

$-0,0000321 = -0,0000626$

$S = \frac{A}{\lambda}\cos(\alpha-\delta) + \Delta\sin(\beta-\delta) = -0,000188 - 0,000065 = -0,000253$

$S' = S_m - S_n = -0,000253 + 0,000342 = +0,000089$

Kiszámítás módja

Ekliptikai koordinátákból kiindulva 1' alatt kommutációban megfelel 1,800 egység
Deklinációban 2,700

27°

48°

× Esztergom
9°30'
2,098

× Bécs Tarra
9°46' -19 = 9°27'
2,098

× Budapest
9°22,8' +13 = 9°36'
2,105

~~Δ = 0,000097~~
~~Δ = 0,000097 β = 97°~~

Δ = 0,000070 β = 113°

δ = 9°30

$\frac{dl}{h}\sin(\alpha-\delta_1) = \Delta\cos(\beta-\delta)$

$\frac{dl}{h}$ −0,000057 −0,000039

$\frac{dl}{h} = 0,000120$ $\alpha = 216$

~~−0,000053~~

$S = \Delta\sin(\beta-\delta) + \frac{dl}{h}\cos(\alpha-\delta) = -0,000166$

$S' = S - S_n = -0,000166 + 0,000342 = +0,000176$

$\operatorname{tg} 2\vartheta = \frac{(\frac{dl}{h})^2\sin 2\alpha + \Delta^2\sin 2\beta}{(\frac{dl}{h})^2\cos 2\alpha + \Delta^2\cos 2\beta} = -\frac{1,26}{3,66}$ $2\vartheta = \begin{cases} -57°40 \\ +138°20 \end{cases}$

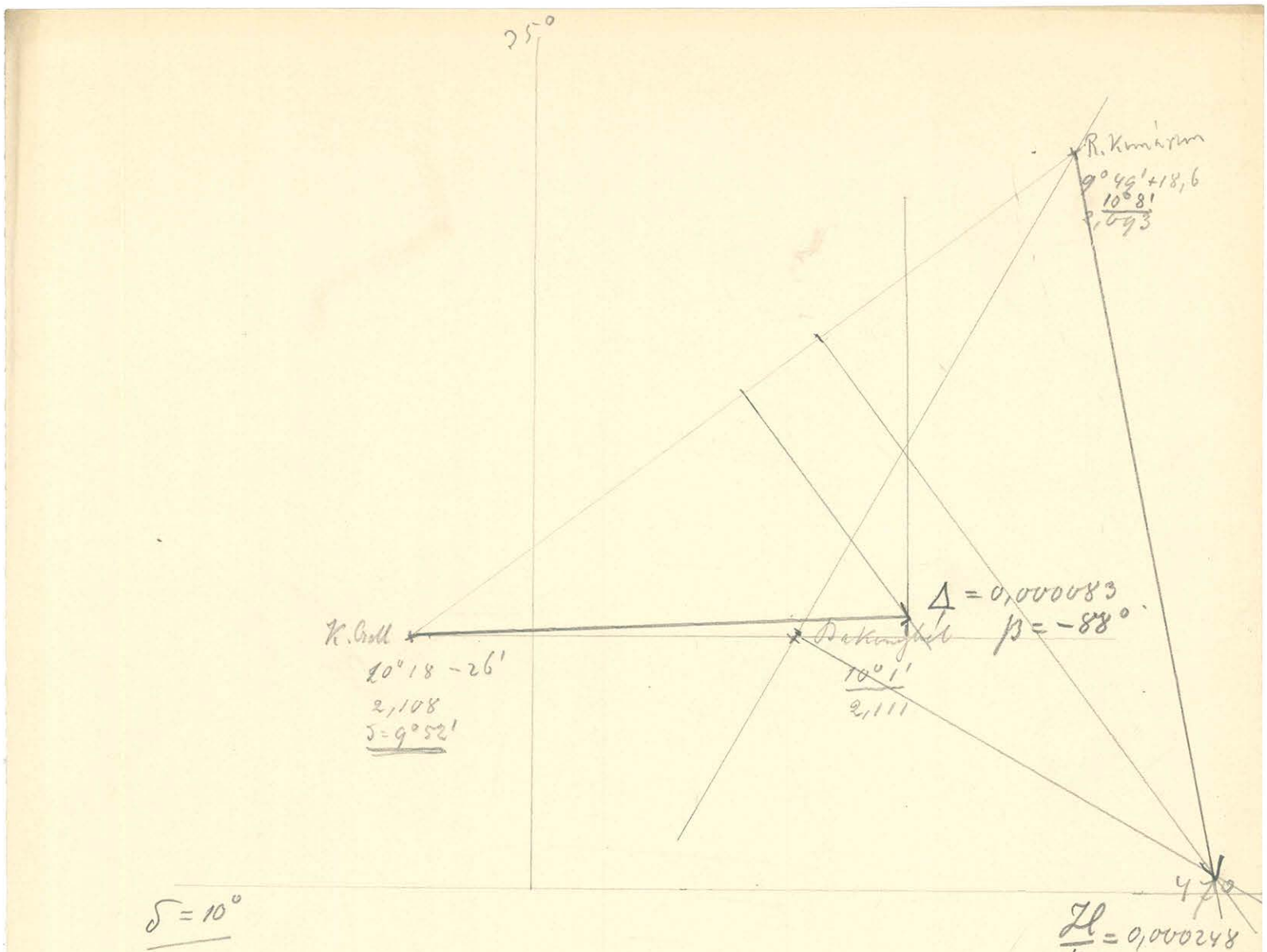
~~$\vartheta = -25°50'$~~ $\vartheta = \frac{dl}{h}\cos(2\vartheta-\alpha-\delta) + \Delta\cos(2\vartheta-\beta-\delta) = 0,000070$

$\operatorname{tg} 2\vartheta' = \frac{D\sin 2\vartheta + 0,000104}{D\cos 2\vartheta + 0,000164} = \frac{-0,000055 + 0,000104}{+0,000043} = \frac{0,000049}{0,000207}$ $\vartheta' = \begin{cases} 13°20 \\ \end{cases}$

$\vartheta' = 6°50'$

$\vartheta' = 0,000213 = 0,000213$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)' = 0,000194$ $\frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)' = +0,000019$



$$\frac{\Delta l}{h}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$$

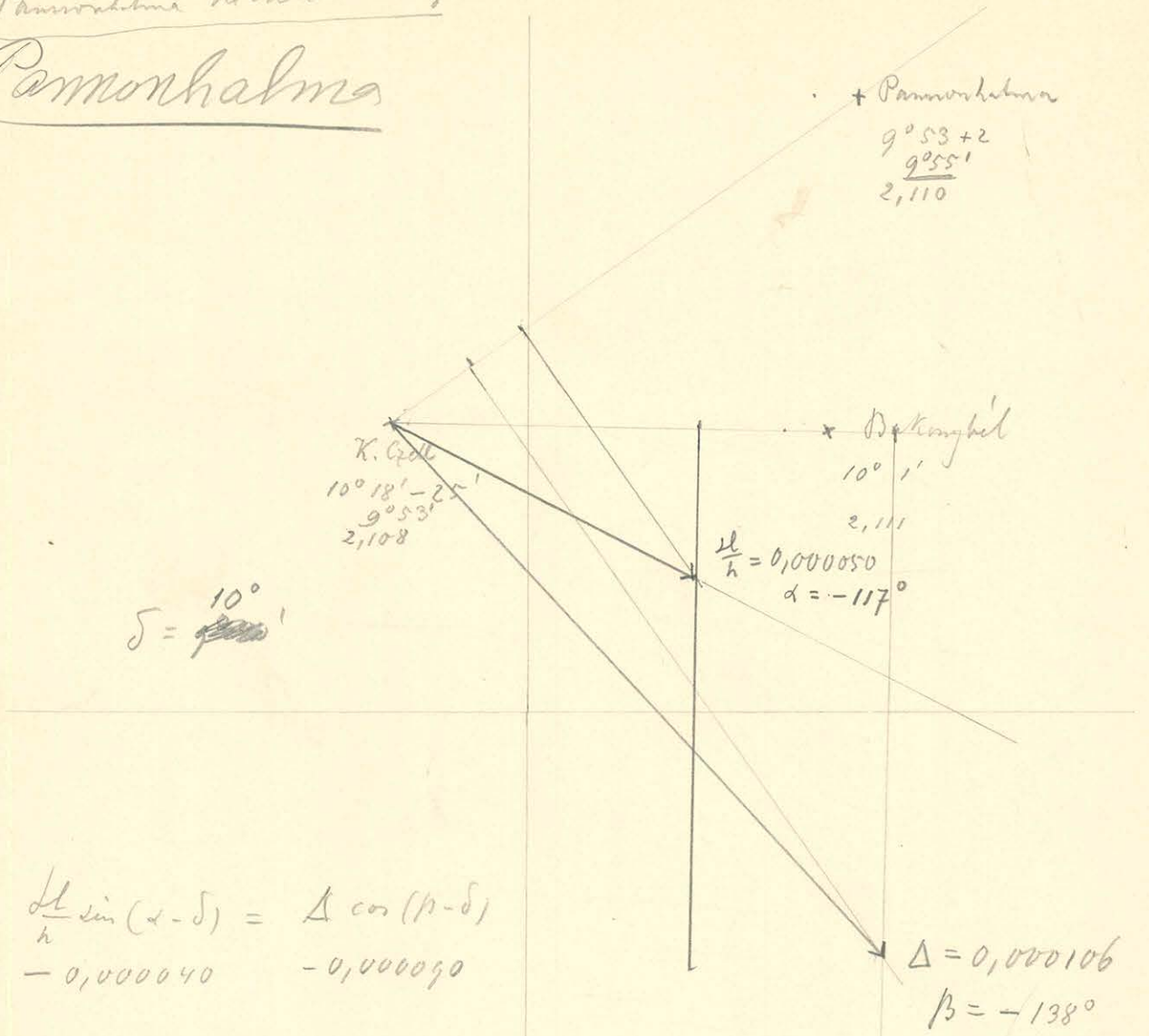
$$-0{,}000008 = -0{,}000012$$

$$\delta = \Delta\sin(\beta-\delta) + \frac{\Delta l}{h}\cos(\alpha-\delta) = -0{,}000320$$

$$\delta - \delta_n = -0{,}000320 + 342 = +0{,}000012$$

Pannonhalma K. Gyll. Bakonyhát.

Pannonhalma



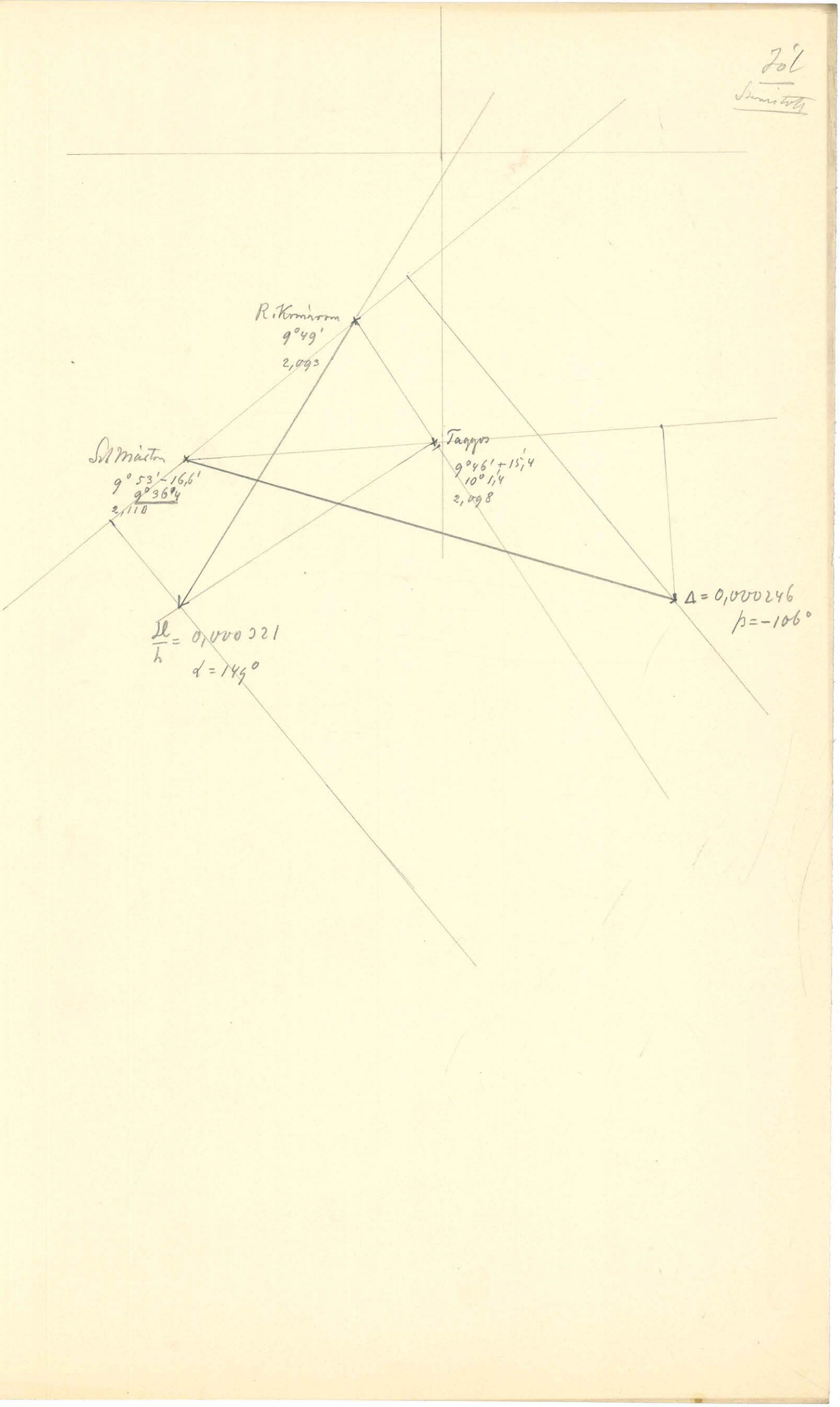
$\frac{\Delta l}{h} \sin(\alpha - \delta) = \Delta \cos(\beta - \delta)$

$-0{,}000040 \qquad -0{,}000090$

$S = \Delta \sin(\beta - \delta) + \frac{\Delta l}{h} \cos(\alpha - \delta) = -0{,}000086$

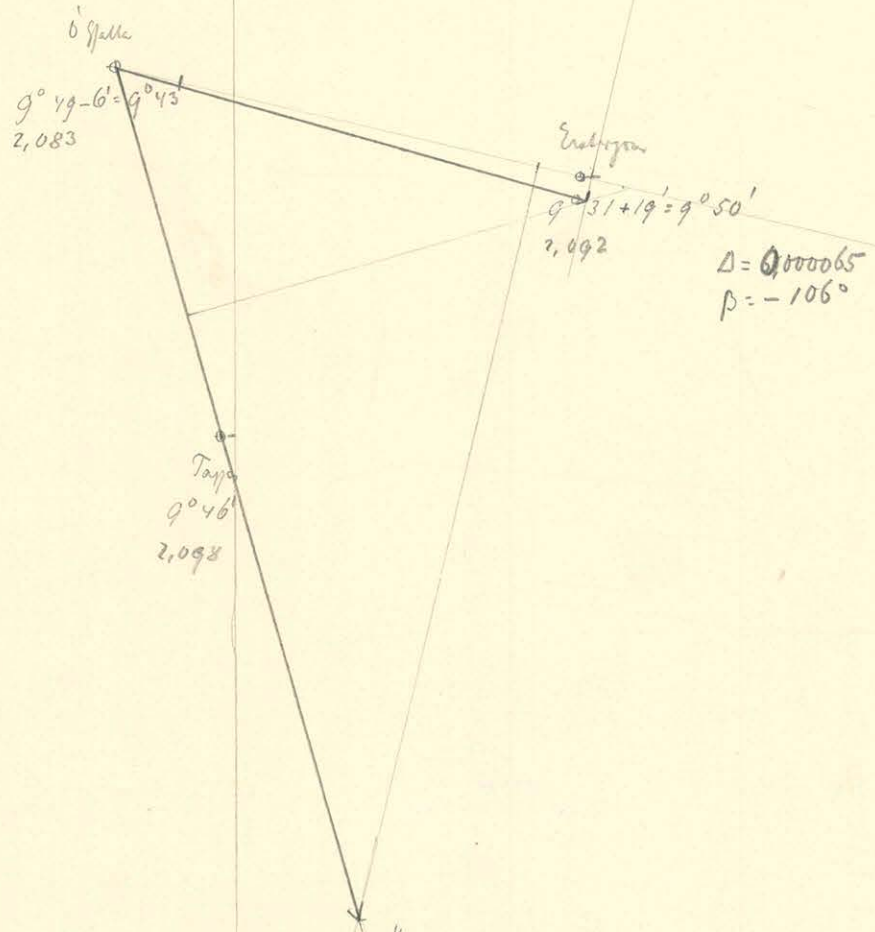
$S - S_2 = -0{,}000086 + 0{,}000342 = +0{,}000256$

Semistolg


R. Kronstorm
9°49'
2,093
St Märten
9° 53' - 16,6'
9° 36',4
2,110
Tapps
9°46' + 15',4
10° 1,4
2,098
Δ = 0,000246
β = -106°
ll/h = 0,000321
α = 145°

Περίπτωση πέμπτη 36° Ο΄-Φραλλα - Ενκεγιαν - Ογκτάγος

48°



δ = 9° 30

$$\frac{H}{L}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$$

$$-0,0000279 = -0,0000280$$

$$S = \Delta\sin(\beta-\delta) + \frac{H}{L}\cos(\alpha-\delta)$$

$$S = -0,0000506 - 0,0002789 = -0,0003295$$

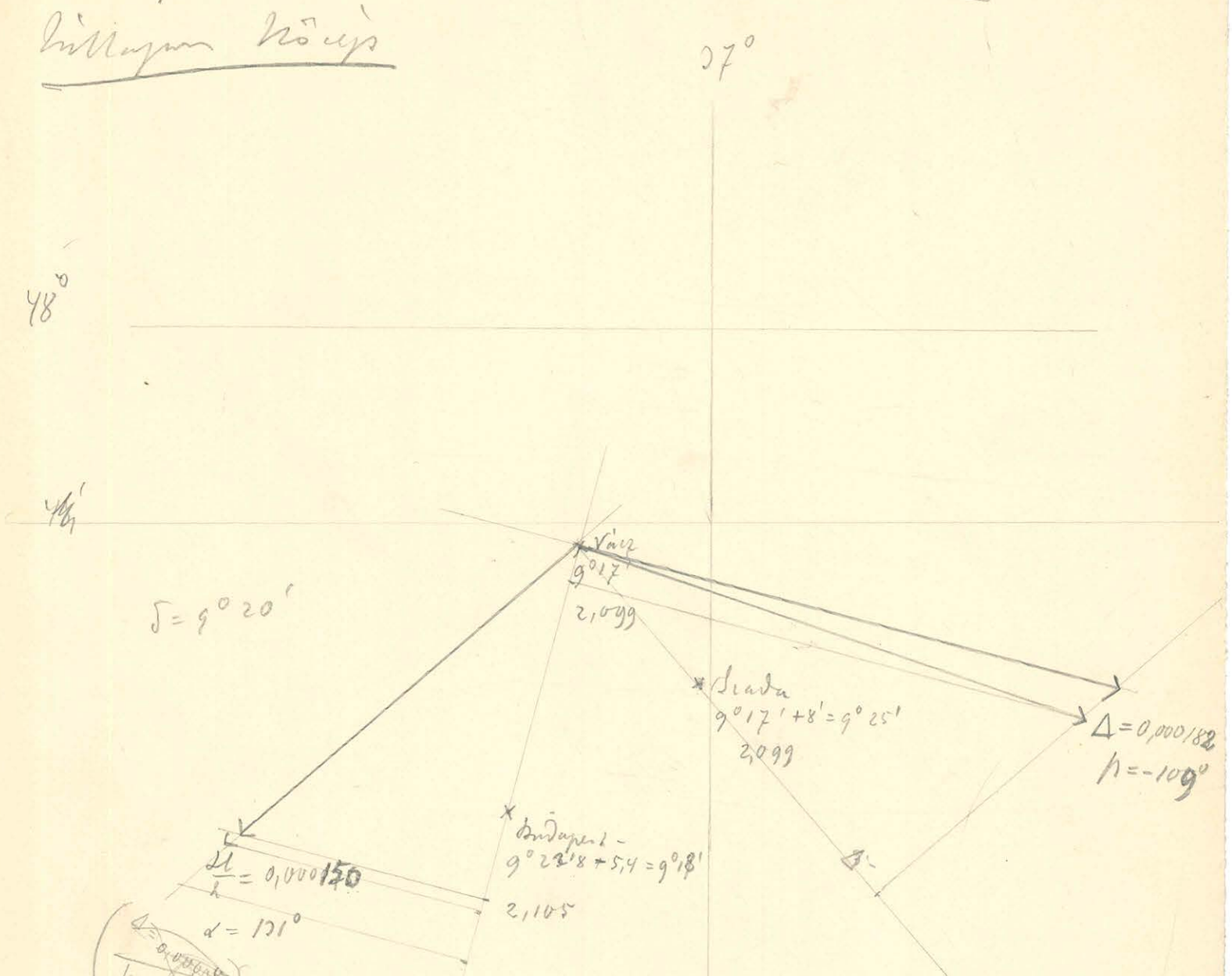
$$S' = S - S_n = -0,0003295 + 0,0003412 = +0,0000117$$

$$\operatorname{tg} 2\vartheta = \frac{\left(\frac{H}{L}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{H}{L}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} =$$

Hajnówka mérték

Budapest Vám Szabadság.

Svájcban készült



$$\frac{dl}{l} = 0{,}000150$$

$$\frac{dl}{l}\sin(\alpha-\delta) = \Delta\cos(\varphi-\delta)$$

$$0{,}000124 \qquad -0{,}000105$$

$$S = \Delta\sin(\varphi-\delta) + \frac{dl}{l}\cos(\alpha-\delta) = -0{,}000241$$

$$S' = S - S_n = -0{,}000241 + 0{,}000342 = +0{,}000101$$

$$tg\,2\vartheta = \frac{(\frac{dl}{l})^2\sin 2\alpha + \Delta^2\sin 2\varphi}{(\frac{dl}{l})^2\cos 2\alpha + \Delta^2\cos 2\varphi} = 0{,}0651 \qquad 2\vartheta \begin{cases} 3°40 \\ 183°40 \end{cases}$$

$\delta = 1°50'$ $\quad D = \frac{dl}{l}\cos(2\vartheta-\alpha-\delta) + \Delta\sin(2\vartheta-\varphi-\delta) = 0{,}000068$

$D_n = 0{,}000164$

$\vartheta_n = 106°10'$

$$tg\,2\vartheta' = \frac{D\sin 2\delta - D_n\sin 2\vartheta_n}{D\cos 2\delta - D_n\cos 2\vartheta_n} = \frac{0{,}000005 + 0{,}000104}{0{,}000068 + 0{,}000164} = 0{,}470 \qquad 2\vartheta' \begin{cases} 25°16 \\ \end{cases}$$

$\vartheta' = 12°40'$ $\quad D' = 0{,}000256$

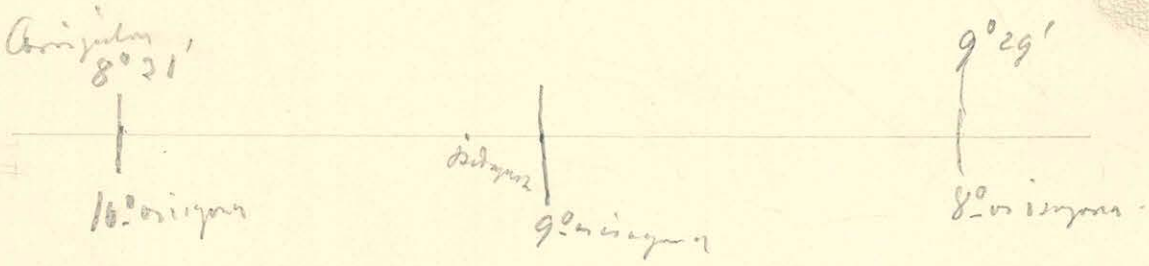
$$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)' = +0{,}000178 \qquad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000078.$$

Közép

Kép Schmidt fele 8° és 10° magasságból. Budapest.

$\varphi = -90$ $\quad \Delta_{\text{korrekció}} = 0{,}000072.$

Deklinatio correctio $\frac{1}{2}$ millimeter $\frac{\text{Szenki}}{\text{Kis Hegyen}} = 0{,}81'$



$\frac{\Delta l}{h}$ 2,08 és 2,16 magasságokból

$\frac{\Delta l}{h} = 0{,}000268$ $\quad \alpha = 195°$

$\delta = 9°$

$\frac{\Delta l}{h}\sin(\alpha - \delta) = \Delta \cos(\varphi - \delta)$

$-0{,}000028 \qquad -0{,}000012$

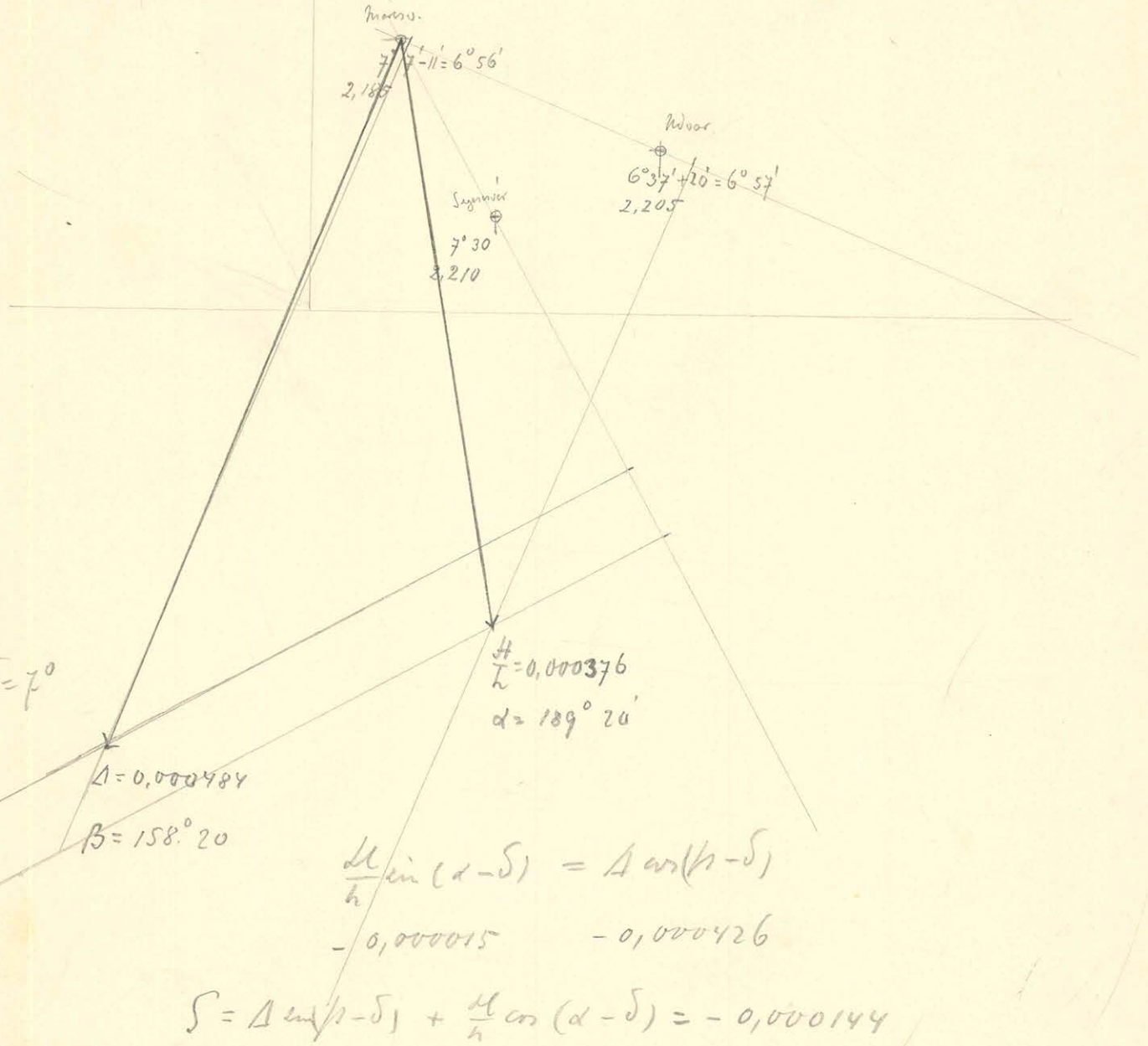
$\delta_h = \Delta \sin(\varphi - \delta) + \frac{\Delta l}{h}\cos(\alpha - \delta) = -0{,}000342$

$\operatorname{tg} 2\delta = \frac{(\frac{\Delta l}{h})^2 \sin 2\alpha + \Delta^2 \sin 2\varphi}{(\frac{\Delta l}{h})^2 \cos 2\alpha + \Delta^2 \cos^2 \varphi} = 0{,}6\ldots$ $\quad 2\delta_1 \begin{cases} 32°30' \\ 212°30' \end{cases}$

$\delta_h = 106° 15'$ $\quad \delta_h = \frac{\Delta l}{h}\cos(2\delta - \alpha - \delta) + \Delta \sin(2\delta - h - \delta) = 0{,}000194$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_h = -0{,}000074$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_h = -0{,}000268$

Sagres nine Nwoo vaiuchy Udvoshy (Dr mitt Cour



$$\frac{H}{h}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$$

$$-0,000015 \qquad -0,000426$$

$$S = \Delta\sin(\beta-\delta) + \frac{H}{h}\cos(\alpha-\delta) = -0,000144$$

$$S' = S - S_h = -0,000144 + 0,000201 = +0,000057$$

$$\operatorname{tg} 2\delta = \frac{(\frac{H}{h})^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{(\frac{H}{h})^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = -0,38 \qquad 2\delta = \begin{cases} -20°50' \\ +159°10' \end{cases}$$

$\delta = 79°40'$ $\quad D = \frac{H}{h}\cos(2\delta - \alpha - \delta) + \Delta\sin(2\delta - \beta - \delta) = +0,000250$

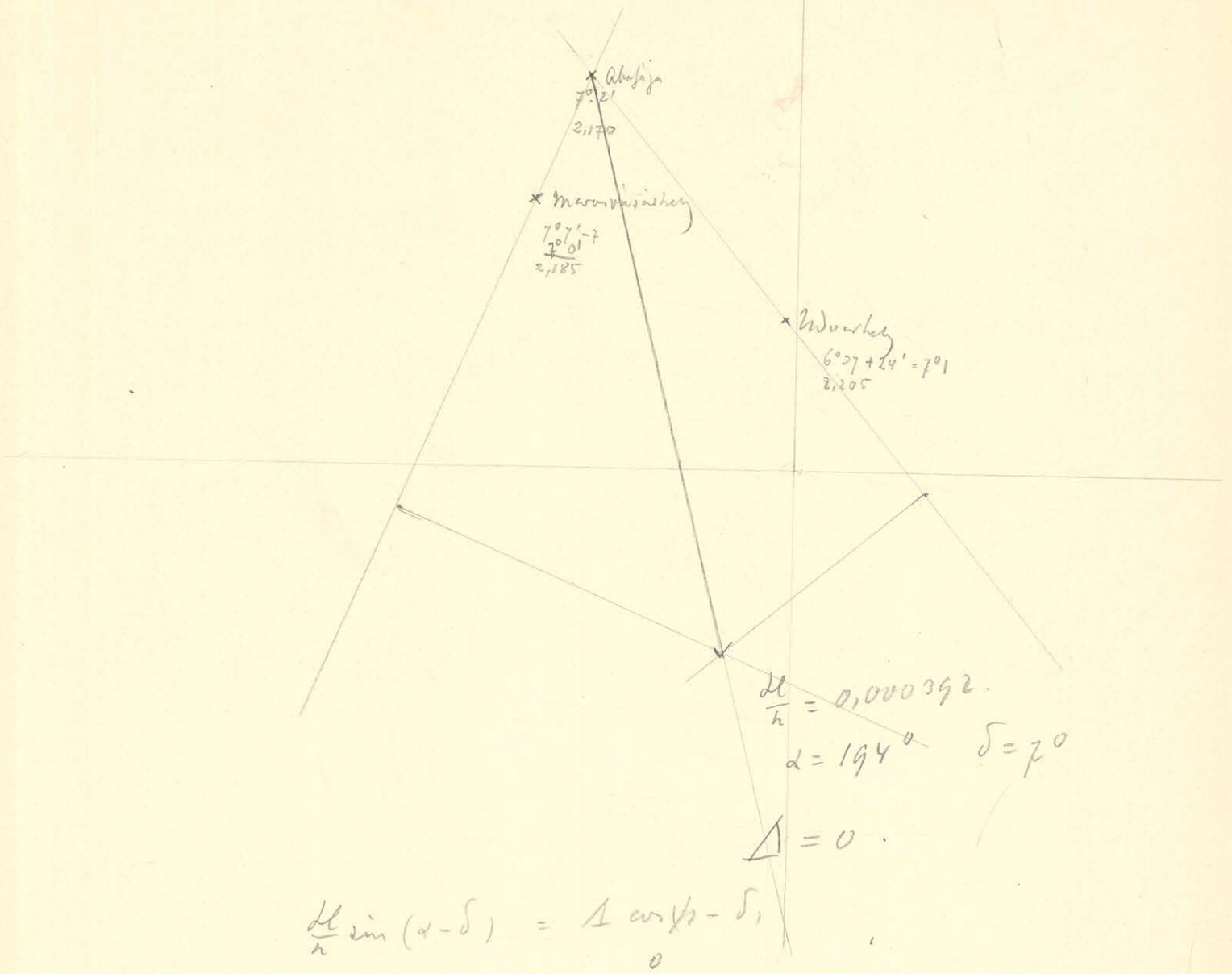
$$\operatorname{tg} 2\delta' = \frac{D\sin 2\delta + 0,000118}{D\cos 2\delta + 0,000231} = 2,65 \qquad 2\delta' = \begin{cases} 69°20' \\ 249°20' \end{cases} 90° \quad 270°$$

$\delta' = 45°$ $\quad D' = \dfrac{D\sin 2\delta + 0,000118}{\sin 2\delta'} = 0,000206$

$$\left(\frac{1}{h}\frac{\partial^2 V}{\partial x^2}\right)' = +0,000102 \qquad \left(\frac{1}{h}\frac{\partial^2 V}{\partial y^2}\right)' = -0,000075$$

Wdowiec, Abastja, Marcinkowice

Da mihi cor



$\frac{\Delta l}{h} = 0{,}000392.$

$\alpha = 194^0 \qquad \delta = 7^0$

$\Delta = 0.$

$\frac{\Delta l}{h} \sin(\alpha - \delta) = \Delta \cos\beta - \delta_1$

0

$-0{,}000047.$

$S = -0{,}000389. = \frac{\Delta l}{h} \cos(\alpha - \delta)$

$S' = S - S_1 = -0{,}000389 + 0{,}000201 = -0{,}000188$

$tg\, 2\vartheta = \frac{\left(\frac{\Delta l}{h}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{\Delta l}{h}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = tg\, 2\alpha \qquad 2\vartheta = \begin{cases} 28^0 \\ 208^0 \end{cases} \qquad \vartheta = \begin{cases} 14^0 \\ 104^0 \end{cases}$

$\vartheta = 104^0$ ma $\quad \gamma = \frac{\Delta l}{h} \cos(2\vartheta - \alpha - \delta) = 0{,}000389$

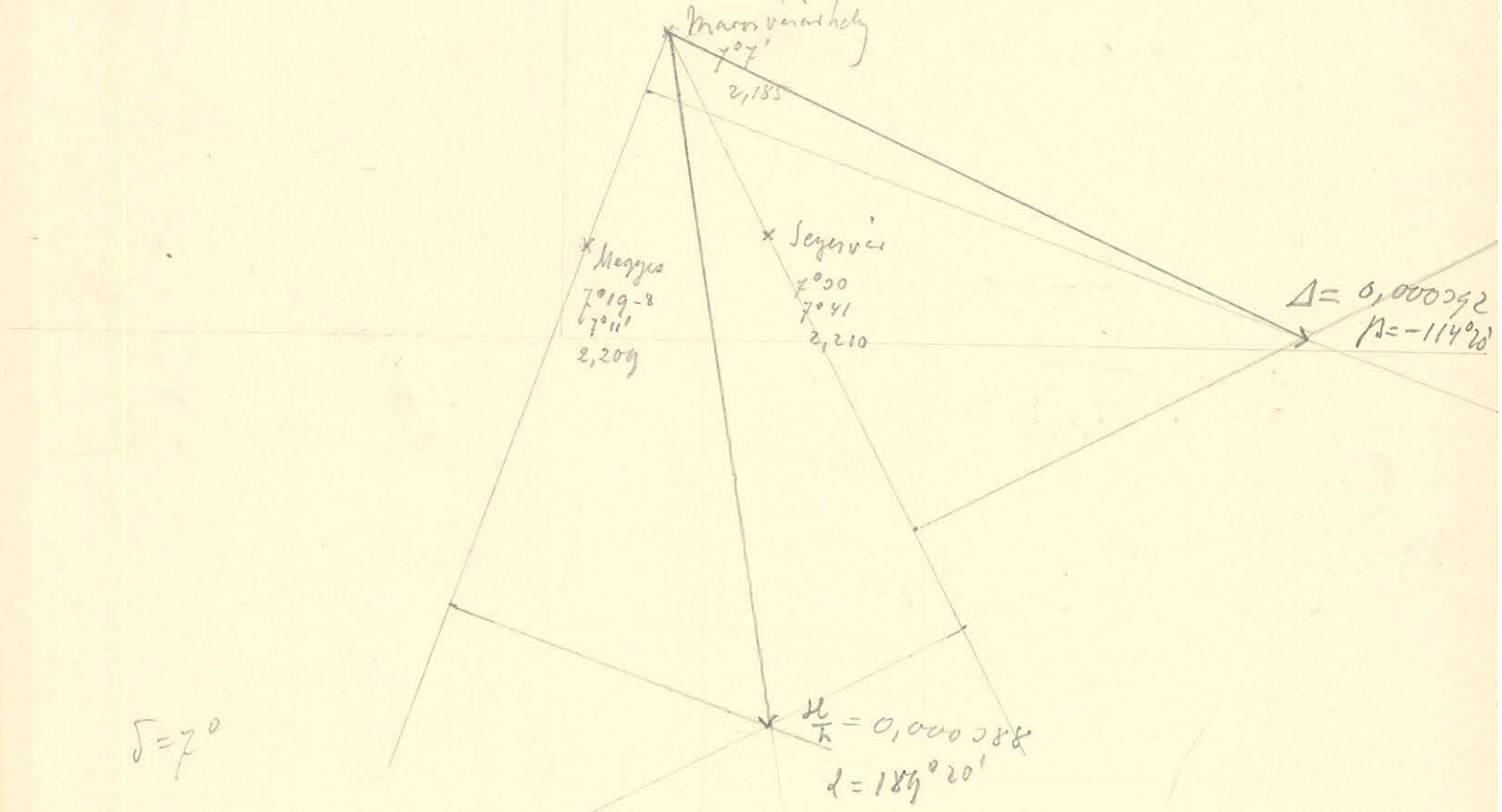
$tg\, 2\vartheta' = \frac{\gamma \sin 2\vartheta + 0{,}000118}{\gamma \cos 2\vartheta + 0{,}000231} = 0{,}585 \qquad 2\vartheta' = \begin{cases} 30^0 20' \\ 210^0 20' \end{cases}$

$\vartheta' = 105^0 10'$

$\gamma' = \frac{\gamma \sin 2\vartheta + 0{,}000118}{\sin 2\vartheta'} = 0{,}000112$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right) = -0{,}000038 \qquad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000150$

Budapest Szegvári Marosvásárhely Daniel (1955)



$$\frac{dl}{h}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$$

$$-0{,}000015 \qquad -0{,}000198$$

$$\operatorname{tg} 2\vartheta = \frac{\left(\frac{dl}{h}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{dl}{h}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = +3{,}96 \qquad 2\vartheta = \begin{cases} 75°50' \\ 255°50' \end{cases} \quad \vartheta = \begin{cases} 38° \\ 128° \end{cases}$$

$\vartheta = 128°$.

$$\gamma = \frac{u}{h}\cos(2\vartheta-\alpha-\delta) + \Delta\sin(2\vartheta-\beta-\delta) = 0{,}000176$$

$$\operatorname{tg} 2\vartheta' = \frac{\gamma \sin 2\vartheta + 0{,}000118}{\gamma\cos 2\vartheta + 0{,}000234} = -1{,}90 \qquad 2\vartheta' = \begin{matrix} -62°40' \\ +117°20' \end{matrix}$$

$\vartheta' = -31°20'$

$$\gamma' = 0{,}000295$$

$$S = \Delta\sin(\beta-\delta) + \frac{dl}{h}\cos(\alpha-\delta) = -0{,}000722.$$

$$S - S' = -0{,}000722 + 0{,}000201 = -0{,}000521$$

$$\left(\frac{1}{h}\frac{\partial^2 V}{\partial x^2}\right)' = -0{,}000113 \qquad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000408$$

Lemvat nagy zenitcsöjű távcső.

Göttingen.

$\delta = 17^\circ 6'$ $\quad \Delta = 0{,}00024$ $\quad \beta = 82^\circ 30'$ $\quad c = 0{,}000384$

$\frac{dl}{h} = 0{,}00037$ $\quad \alpha = 200^\circ$

$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$-0{,}0000186g$ $\quad +0{,}0001129$ $\quad 9{,}0000998$

$\operatorname{tg} 2\vartheta = 0{,}7264$

$\frac{1}{2}\operatorname{tg} 2\vartheta = 0{,}3632$ $\quad 2\vartheta = 36^\circ$

$\vartheta = 18^\circ$

Pozsonyi

Bajorországi távcső

$\frac{1}{2}$ minimum $= 0{,}608$ kilométer

$c = \frac{0{,}608}{6370 \cdot \cos\varphi}$ $\quad c_{48} = 0{,}000105$ $\quad c_{49} = 0{,}000109$ $\quad c_{50} = 0{,}000113$

Darmstadt, $h =$

$\delta = 17^\circ 30'$ $\quad \Delta = 0{,}0000350$ $\quad \beta = 64^\circ$

$c = 0{,}000113$

$\frac{dl}{h} = 0{,}000064$ $\quad \alpha = 202^\circ$

$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$+0{,}0000499$ $\quad +0{,}0000390$

$-0{,}0000046$ $\quad +0{,}0000290 = 0{,}0000241$

$+0{,}0000289$

$\operatorname{tg} 2\vartheta = -0{,}264$ $\quad 2\vartheta = -15^\circ$ $\quad \vartheta = -7^\circ 30'$

$+165$ $\quad +82{,}30'$

$\vartheta = -7^\circ 30'$ el

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0{,}0000615$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0{,}0000118$

Lemberg. $\quad \delta = 18^\circ$ $\quad \Delta = 0{,}0000064$ $\quad \beta = 90^\circ$ $\quad c = 0{,}00011$

$\frac{dl}{h} = 0{,}000535$ $\quad \alpha = 201^\circ$

$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$-0{,}0000281$ $\quad +0{,}0000341$ $\quad 0{,}0000192$

$\operatorname{tg} 2\vartheta = 0{,}828$ $\quad 2\vartheta = 39^\circ 40'$ $\quad \vartheta = 19^\circ 50'$

$219^\circ 40'$ $\quad 109^\circ 50'$

$\vartheta = 19^\circ 50'$ el

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right) = 0{,}00054$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0{,}0000042$

Rajna Mühlrad Carlsruhe nullach.

$\delta = 17°40'$ $\Delta = 0{,}00029$ $\beta = 83°30'$ $c = 0{,}000011$

$\frac{\Delta l}{h} = 0{,}000106$ $\alpha = 135°$

$\frac{\Delta l}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$0{,}0000943 + 0{,}0000334 = 0{,}0001185$

$0{,}000127$

$\operatorname{tg} 2\vartheta = +0{,}0688$ $2\vartheta = 4° \,/\, 184°$ $\vartheta = 2° \,/\, 92°$

$\vartheta = 2°$ al semitum

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right) = -0{,}0000803$ $\frac{1}{h}\frac{\partial^2 V}{\partial y^2} = 0{,}0001530$

Heidelberg.

$\delta = 17°30'$ $\Delta = 0{,}0000944$ $\beta = 90°$ $c = 0{,}000111$

$\alpha = 189°30$ $\frac{\Delta l}{h}$

Speyer

$\delta = 17°40$ $\Delta = 0{,}0001$ $\beta = 90°$ $c = 0{,}000111$

$\alpha = 200°$ $\frac{\Delta l}{h} = 0{,}000266$

$\frac{\Delta l}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$-0{,}0000046 + 0{,}0000334 = 0{,}0000304$

$0{,}0000288$

$\operatorname{tg} 2\vartheta = +0{,}754$ $2\vartheta = 37° \,/\, 217°$ $\vartheta = 18°30' \,/\, 108°30'$

$\vartheta = 18°30'$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0{,}000266$ $\frac{\partial^2 V}{\partial y^2} = -0{,}0000112$

Köln Mönchhof in Lippstadt Münster in Reichshof Gröba Dedinetti Heilbronn Scharbruch Hörka

$\delta = 17°40$ $\Delta = 0{,}000072$ $\beta = 87°$ $c = 0{,}00011$

$\alpha = 196°$ $\frac{\Delta l}{h} = 0{,}000124$

$\frac{\Delta l}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$0{,}0000038 \quad 0{,}0000334 = 0{,}0000323$ fast um.

$\operatorname{tg} 2\vartheta = 0{,}91$ $2\vartheta = 42° \,/\, 222°$ $\vartheta = 21° \,/\, 111°$

$\vartheta = 21°$ ra

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0,000124$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0,000046$

Sul

$\delta = 17°50'$ $\quad A = 0,000072$ $\quad B = 85°$ $\quad c = 0,00011$

$\frac{\mu}{h} = 0,000059$ $\quad \alpha = 198°30'$

$\frac{\mu}{h}\sin(\alpha-\delta) + c\sin\delta = A\cos(B-\delta)$

$-0,000001$ $\quad 0,0000324 = 0,0000279$

$0,0000324$

$\operatorname{tg} 2\vartheta = 1,714$ $\quad 2\vartheta = \begin{matrix} 60° \\ -120° \end{matrix}$ $\quad \vartheta = \begin{matrix} 30° \\ -60° \end{matrix}$

$\vartheta = 30°$ ra.

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = 0,000059$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0,0000385$

Fagyon

Megvilágítás az északkeleti égnegyedben.

$\delta = 7°$ $\quad B = 41°30'$ $\quad A = 0,0002445$ $\quad c = 0,00021.$

$\alpha = 156°$ $\quad \frac{\mu}{h} = 0,000247.$

$\frac{\mu}{h}\sin(\alpha-\delta) + c\sin\delta = A\cos(B-\delta)$

$0,0001272 + 0,0000256 = 0,0001381$

δ

$0,000152$

$\operatorname{tg} 2\vartheta = -1,472$ $\quad 2\vartheta = \begin{matrix} -55°50' \\ +124°10' \end{matrix}$ $\quad \vartheta = \begin{matrix} -28° \\ +62° \end{matrix}$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = +0,000098$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0,000105$

$\vartheta = +62°$ ra

Második példa. Ismert lájcka a $9°$-os és $6°20'$-os irányok közötti

valamint a 2,100 és 2,220 oldalmértani számítva.

$\delta = 7°40$ $\quad \beta = 94°$ $\quad \Delta = 0{,}00023$ $\quad C = 0{,}00021$

$\alpha = 190°$ $\quad \frac{dl}{l} = 0{,}00023$ hibás

$$\frac{dl}{l}\sin(\alpha-\delta) + C\sin\delta = \Delta\sin(\beta-\delta)$$

$$-0{,}0000097 + 0{,}0000268 = 0{,}0000171$$

$\operatorname{tg} 2\delta = 0{,}504$ $\quad 2\delta = \begin{matrix}27°\\207°\end{matrix}$ $\quad \delta = \begin{matrix}13°30'\\103°30'\end{matrix}$

$\delta = +13°30'$-ra

$\frac{1}{k}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0{,}0002300$ $\quad \frac{1}{k}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = +0{,}0000249$

$D_n = \left(\frac{\partial^2 V}{\partial x^2} - \frac{\partial^2 V}{\partial y^2}\right) = -0{,}0002549\,k$ $\quad \delta_n = 13°30$

körgyűrűs

Fugrassa $D = +0{,}0001533$ $\quad \delta = 62°$

$2\delta' = \begin{matrix}159°20'\\339°20'\end{matrix}$ $\quad \operatorname{tg} 2\delta' = \frac{D\sin 2\delta - D_n \sin 2\delta_n}{D\cos 2\delta - D_n \cos 2\delta_n} = \frac{+0{,}000127 + 0{,}000118}{-0{,}0000857 + 0{,}000231} = +\frac{0{,}000245}{0{,}000145}$

$\delta' = \begin{matrix}79°40'\\169°40'\end{matrix}$

$D' = \frac{D\sin 2\delta - D_n \sin 2\delta_n}{\sin 2\delta'} = \frac{+0{,}000245}{0{,}86} = 0{,}000285$

közös δ' mindkettőnek $\delta' = 79°40'$

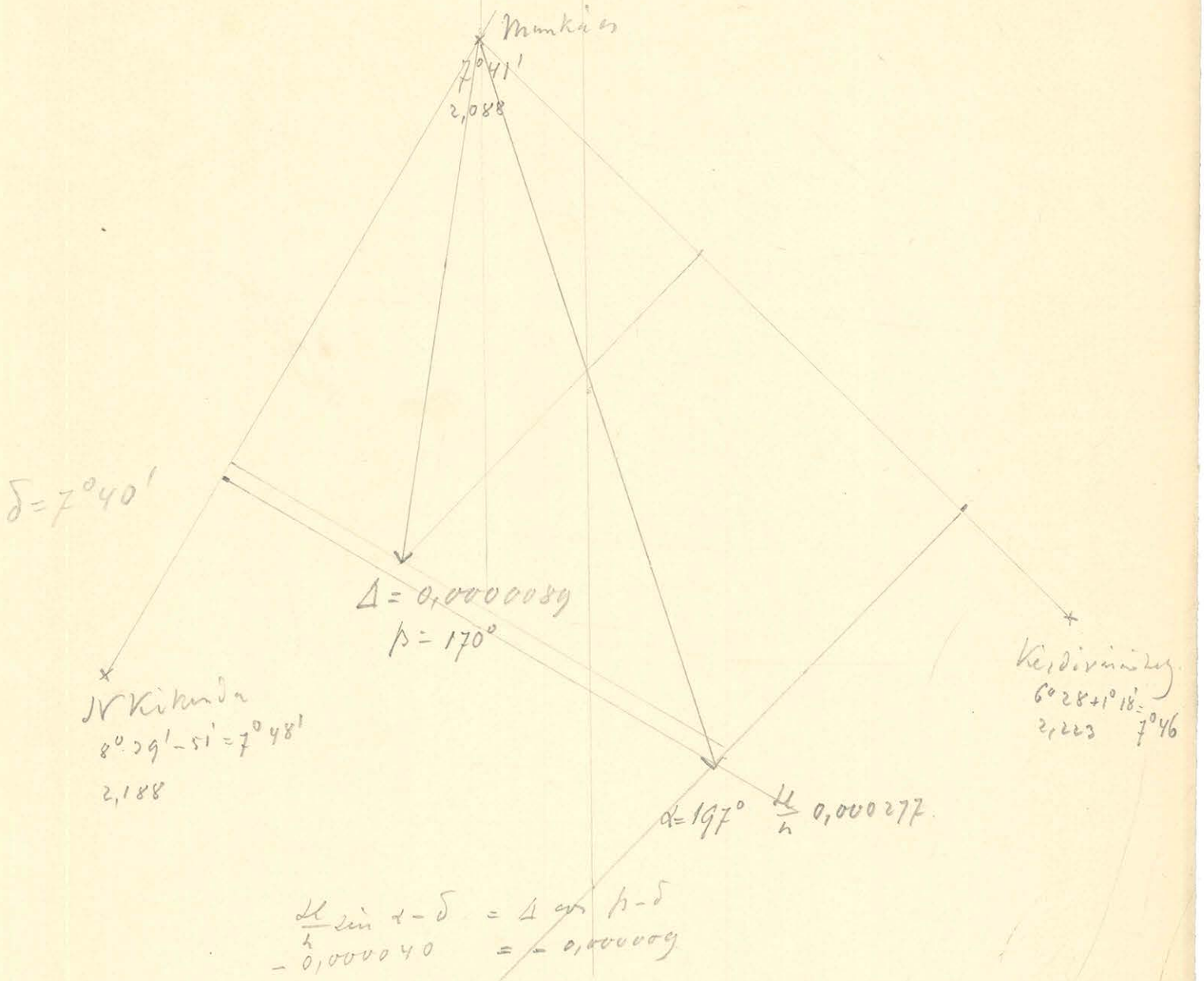
Medgyesre. $D = +0{,}0000994$ $\quad \delta = 80°40'$

$2\delta' = \begin{matrix}47°40\\227°40\end{matrix}$ $\quad \operatorname{tg} 2\delta' = \frac{+0{,}0000032 + 0{,}000118}{-0{,}0000994 + 0{,}000231} = \frac{+0{,}000150}{+0{,}000137}$

$\delta' = \begin{matrix}23°50'\\113°50'\end{matrix}$

$D' = \frac{+0{,}000150}{0{,}74} = +0{,}000203$

Nagykikinda Munkács Kiskörösi vízmérce



$$\frac{\mu}{h}\sin\alpha - \delta = \Delta\sin\beta - \delta$$

$$-0{,}000040 = -0{,}000009$$

$$tg\,2\vartheta = \frac{\left(\frac{\mu}{h}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{\mu}{h}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = 0{,}674 \qquad tg\,2\vartheta = \begin{cases} 34° \\ 214° \end{cases}$$

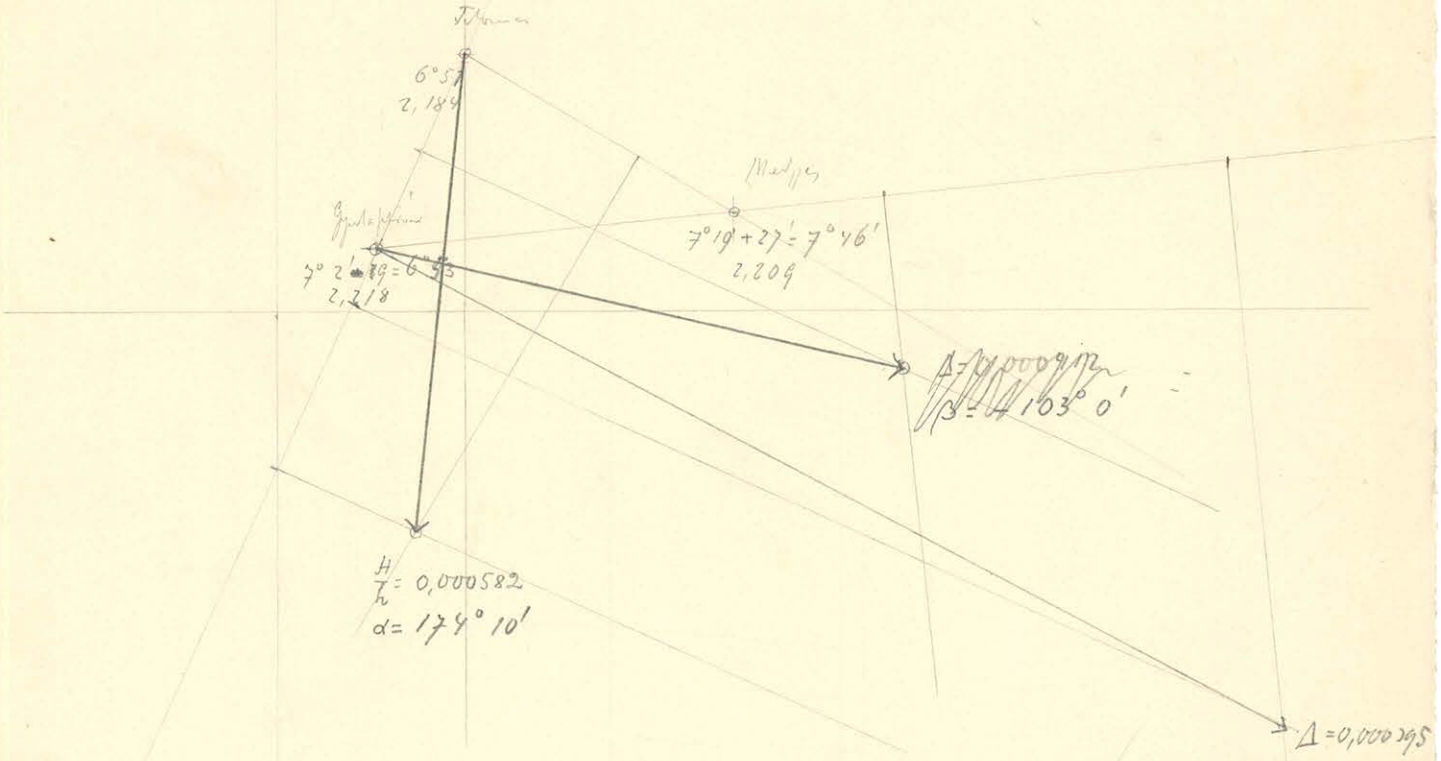
$\vartheta_1 = 107°$ $\quad D_1 = \frac{\mu}{h}\cos(2\vartheta - \alpha - \delta) + \Delta\sin(2\vartheta - \beta - \delta) = 0{,}000259$

$$S_1 = \Delta\cos(\beta - \delta) + \frac{\mu}{h}\cos(\alpha - \delta) = -0{,}000270$$

$$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_1 = -0{,}000006 \qquad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_1 = -0{,}000264$$

Filowing Medyes Gyalaschkiewicz

Dr. mil. W. Ciss



$$tg\,2\delta_* = \frac{\left(\frac{dl}{h}\right)^1 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{dl}{h}\right)^1 \cos 2\alpha + \Delta^2 \cos 2\beta} = +0{,}241$$

$2\delta = \begin{cases} 13°30' \\ 193°30' \end{cases}$ $p = -118$ $\delta = 6°50'$

$\delta = 7°$

$$\begin{cases} tg\,2\delta_1 = 2\,\dfrac{\Delta\cos\beta + \frac{dl}{h}\cos\alpha\, tg\,\delta}{\frac{dl}{h}\cos\alpha - \Delta\sin\beta - \left(\frac{dl}{h}\sin\alpha + \Delta\cos\beta\right) tg\,\delta} = 1{,}20 & 2\delta_1 = \begin{cases} 50°10' \\ 230°10' \end{cases} \quad 25° \\ tg\,2\delta_2 = 2\,\dfrac{\frac{dl}{h}\sin\alpha - \Delta\sin\beta\, tg\,\delta}{\text{Nenner}} = 0{,}478 & 2\delta = \begin{cases} -25°30' \\ 154°30' \end{cases} \quad -12°45' \end{cases}$$

$$S = \Delta\sin(\beta-\delta_1) + \frac{dl}{h}\cos(\alpha-\delta) = -0{,}000990$$

$S_2 = -0{,}000201$ $\qquad S' = -0{,}000200$

$\delta = 96°50'$ rc $\quad D = \frac{dl}{h}\cos(2\delta-\alpha-\delta) + \Delta\sin(2\delta-\beta-\delta) = +0{,}000256$

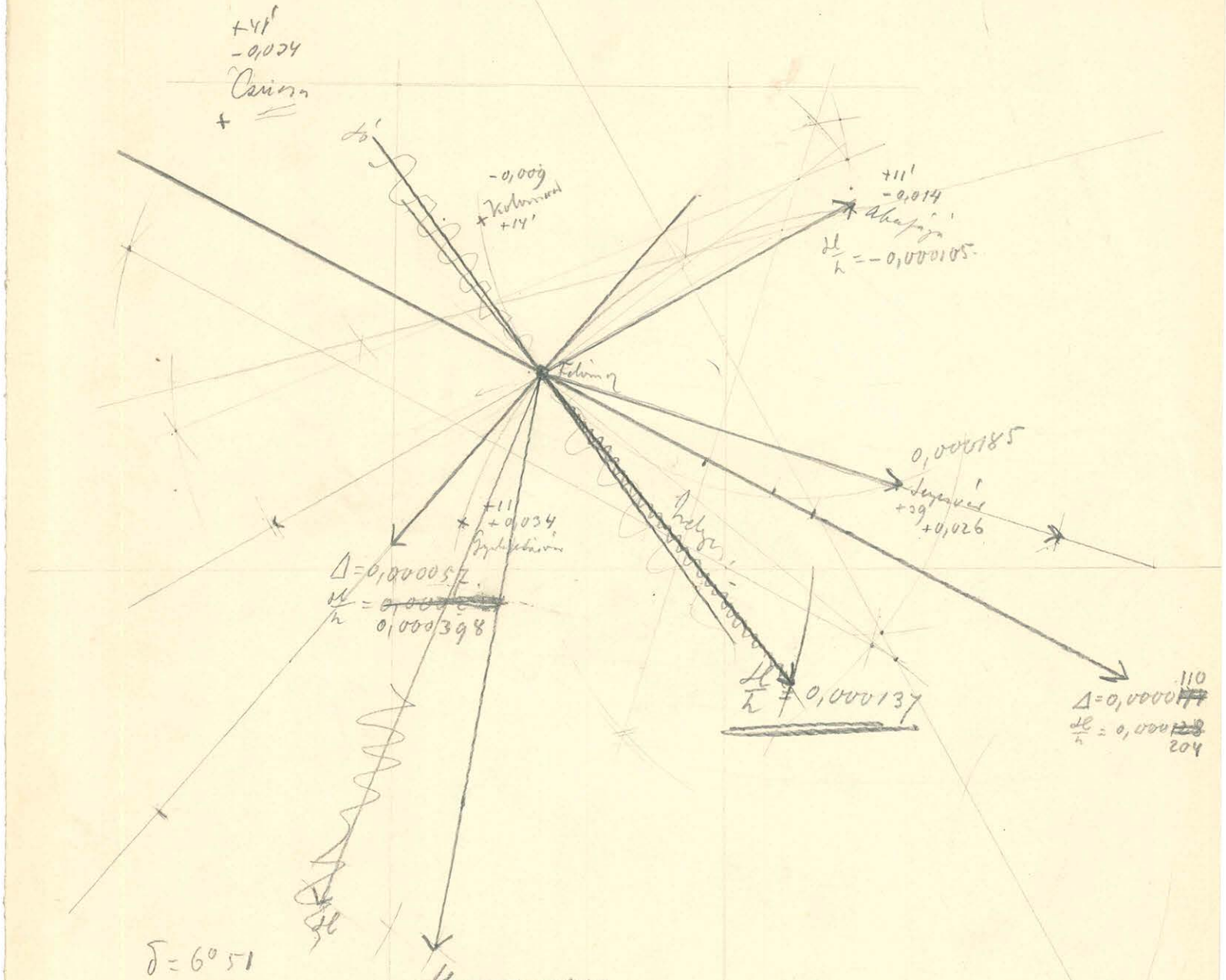
$$tg\,2\delta' = \frac{D\sin 2\delta - D_2 \sin 2\delta_2}{D\cos 2\delta - D_2\cos 2\delta_2} = 0{,}282 \qquad D_2 = 0{,}000259,\ \delta_2 = 103°30$$

$2\delta' = \begin{cases} -16° \\ +164° \end{cases}$ $\qquad \delta' = \begin{matrix} -8° \\ +82° \end{matrix}$

$\delta' = +82°$ na $D' = +0{,}000120$

$\left(\frac{1}{h}\frac{\partial^2 U}{\partial x^2}\right)' = -0{,}000290 \qquad \left(\frac{1}{h}\frac{\partial^2 U}{\partial y^2}\right)' = -0{,}000410$

Felvinya (Gamma Ursae Majoris Szögtávolsága Lyra-tól)



$$\frac{\Delta l}{h} \sin(\alpha - \delta) + c \cos\delta = \Delta \cos(\alpha - \delta)$$

$$- 0{,}0000740 + 0{,}0000252 =$$

Dr. Tahivini Szeben megyz.

Dr mi ut Corr

$\Delta = 1,46' = 0,000424$
$\beta = -44^\circ 40$

2,209
Szeben
$7^\circ 19' + 8'$
$7^\circ 27'$

2,218 $45^\circ 20'$
Szeben
$7^\circ 21 - 28'$
$6^\circ 34.$

2,239
Szeben
$6^\circ 46'$

$C = 0,76'$

$\mathcal{U} = 0,00102$ $\frac{\mathcal{U}}{h} = 0,000462$
$\alpha = 174^\circ 50'$

$\delta = 7^\circ$ $\quad \frac{\mathcal{U}}{h} \sin(\alpha - \delta) = \Delta \cos(\beta - \delta)$

$0,000102 \qquad 0,000254$

$\operatorname{tg} 2\vartheta_1 = \frac{(\frac{\mathcal{U}}{h})^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{(\frac{\mathcal{U}}{h})^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = -6,44$ $\quad 2\vartheta = \begin{cases} -81^\circ 50' \\ +98^\circ 10' \end{cases}$ $\quad 49^\circ 5'$

$\operatorname{tg} 2\vartheta_2 = 2\,\frac{\Delta \cos\beta + \frac{\mathcal{U}}{h}\cos\alpha \operatorname{tg}\delta}{\frac{\mathcal{U}}{h}\cos\alpha - \Delta\sin\beta - (\frac{\mathcal{U}}{h}\sin\alpha + \Delta\cos\beta)\operatorname{tg}\delta} = +2,6$ $\quad 2\vartheta = \begin{cases} 68^\circ \\ 248^\circ \end{cases}$

$\operatorname{tg} 2\vartheta_3 = 2\,\frac{\frac{\mathcal{U}}{h}\sin\alpha - \Delta\sin\beta\operatorname{tg}\delta}{\frac{\mathcal{U}}{h}\cos\alpha - \Delta\sin\beta - (\frac{\mathcal{U}}{h}\sin\alpha + \Delta\cos\beta)\operatorname{tg}\delta} = -0,76$ $\quad 2\vartheta = \begin{cases} -37 \\ +143 \end{cases}$

$S = \Delta \sin(\beta - \delta) + \frac{\mathcal{U}}{h}\cos(\alpha - \delta) = -0,000782.$
$S_1 = -0,000201 \qquad S' = -0,000581$

$\vartheta = \frac{\mathcal{U}}{h}\cos(2\vartheta - \alpha - \delta) + \Delta\sin(2\vartheta - h - \delta)$

$\delta = 45^\circ \quad \vartheta = 0,000348$

$\delta = 84^\circ$ ra $\quad \vartheta = 0,000290$
$S =$

$\delta = 71^\circ 30'$ re $\quad \vartheta = 0,000360$
$S =$

vette 1/.

$$\operatorname{tg} 2\delta' = \frac{\Delta_1 \sin 2\delta_1 - \Delta_2 \sin 2\delta_2}{\Delta_1 \cos 2\delta_1 - \Delta_2 \cos 2\delta_2} = 2{,}54 \qquad 2\delta' = \begin{matrix} 68°30' \\ 248°30' \end{matrix} \qquad \delta' = \begin{matrix} 34°15' \\ 124°15' \end{matrix}$$

$\delta_1 = 49°$ $\quad \Delta_1 = 0{,}000348$

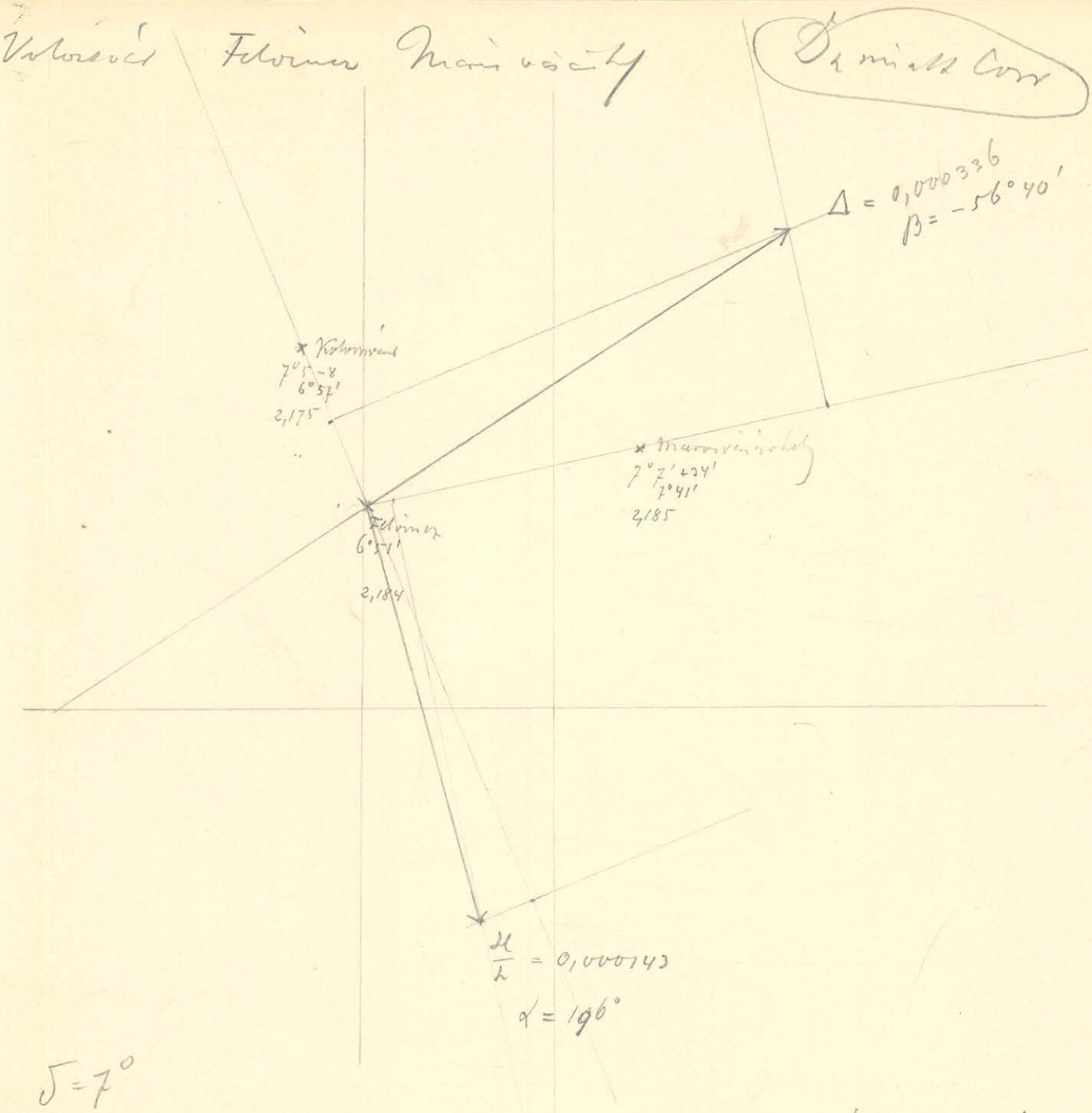
$\delta_2 = 103°30$ $\quad \Delta_2 = 0{,}000219$

$\delta' = 34°10'$ $\quad \underline{\Delta' = \dfrac{\Delta_1 \cos 2\delta_1 - \Delta_2 \sin 2\delta_2}{\sin 2\delta'} = 0{,}000452.}$

$$\underline{\delta' = -0{,}000581}$$

$$\left(\frac{1}{h}\frac{\partial^2 V}{\partial x^2}\right)' = -0{,}000044 \qquad \left(\frac{1}{h}\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000537.$$

Volovská Felvinec Marvánky Denisa Cor



$\delta = 7^\circ$

$$\operatorname{tg} 2\vartheta = \frac{(\frac{M}{\lambda})^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{(\frac{M}{\lambda})^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = +2{,}297 \qquad 2\vartheta = \begin{cases} 67^\circ 20' \\ 247^\circ 20' \end{cases} \qquad \vartheta = 33^\circ 40'$$

$\vartheta = 33^\circ 40'$ $\quad \underline{\underline{\varDelta}} = \frac{M}{\lambda} \cos(2\vartheta - \alpha - \delta) + \Delta \sin(2\vartheta - \beta - \delta) = 0{,}000105$

$\varDelta_1 = 0{,}000259$
$\vartheta_1 = 102^\circ 20'$ $\quad \operatorname{tg} 2\vartheta' = \frac{\varDelta \sin 2\vartheta - \varDelta_1 \sin 2\vartheta_1}{\varDelta \cos 2\vartheta - \varDelta_1 \cos 2\vartheta_1} = 0{,}793 \qquad 2\vartheta' = \begin{cases} 38^\circ 20 \end{cases}$

$\vartheta' = 19^\circ 10'$ $\quad \varDelta' = \frac{\varDelta \sin 2\vartheta - \varDelta_1 \sin 2\vartheta_1}{\sin 2\vartheta'} = 0{,}000247.$

$$S = \Delta \sin(\beta - \delta) + \frac{M}{\lambda} \cos(\alpha - \delta) = -0{,}000443$$

$$S' = S - S_1 = -0{,}000201 = -0{,}000242$$

$$\left(\frac{1}{\lambda}\frac{\partial^2 V}{\partial x^2}\right)' = +0{,}0000525 \qquad \left(\frac{1}{\lambda}\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000295$$

$2\vartheta_1 = \begin{cases} +69^\circ 30 \\ 249^\circ 20 \end{cases}$ $\vartheta_1 = \begin{matrix} 34^\circ 40' \\ 124\ 40' \end{matrix}$

$2\vartheta_2 = \begin{cases} 4^\circ 40' \\ 184^\circ 40' \end{cases}$ $\vartheta_2 = \begin{matrix} 2^\circ 20' \\ 92^\circ 20' \end{matrix}$

Medzyzes

Srebrn | Fyzes

X

Y

1

2

3

Medzyzes $x_2 = +28$

$y_2 = +11$

7°19-8,4'

7°11'

2,209

N. Srebrn

6°46'+17' $x_1 = -1$

6°29' $y_1 = +22,5$

2,239

6°52+17' $x_3 = +1$

7°9' $y_3 = -22,5$

2,221

$C = 0,000022$

$C = 0,76'$

$y_3 - y_2 = -33,5$ $\quad y_2 - y_1 = -11,5$ $\quad \delta_3 - \delta_2 = -2$

$x_3 - x_2 = -27$ $\quad x_2 - x_1 = +29$ $\quad \delta_2 - \delta_1 = +42$

$A = c \cos\beta = 1,116$ $\quad b = c \sin\beta = -0,839$

$\operatorname{tg}\beta = \frac{b}{A} = -0,752$ $\quad \sqrt{A^2+b^2} = 1,396$

$\beta = -37°\,2'$ $\quad \Delta = 0,000392$

$h_3 - h_2 = 0,012$

$h_2 - h_1 = -0,030$

$A' = -0,000892$ $\quad B' = +0,000360$

$\operatorname{tg}\alpha = \frac{B'}{A'} = -0,404$ $\quad \alpha = 158°$ $\quad dl = 0,000962$

$h = 2,220$ $\quad \frac{dl}{h} = 0,000431$

$\delta = 6°50'$

$\operatorname{tg} 2\vartheta = \frac{\left(\frac{dl}{h}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{dl}{h}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = 1,57$

$2\vartheta = 57°30'$ $\quad \vartheta = 28°55'$ / $29°$

$237°30'$ $\quad 118°55'$ / $119°$

$\vartheta = 29° - \delta$

$\frac{1}{h}\frac{\partial^2 V}{\partial x^2} = -0,000191$ $\quad \frac{1}{h}\frac{\partial^2 V}{\partial y^2} = -0,000436$

$D = \frac{\rho_1}{h}\left(\frac{\partial^2 V}{\partial x^2} - \frac{\partial^2 V}{\partial y^2}\right) = 0,000245$ $\quad \vartheta_1 = 29°$ $\quad \vartheta_2 = 0,000253$ $\quad \vartheta_2 = 103°30'$

$\operatorname{tg} 2\vartheta' = \frac{\vartheta_1 \sin 2\vartheta - \vartheta_2 \sin 2\vartheta_2}{\vartheta_1 \cos 2\vartheta - \vartheta_2 \cos 2\vartheta_2} = \frac{0,000208 + 0,000118}{0,000130 + 0,000220} = 0,906$ $\quad 2\vartheta = \begin{cases} 42° \\ 222° \end{cases}$ $\quad \vartheta' = \begin{cases} 21° \\ 111° \end{cases}$ /90

$\vartheta' = 21°$ $\quad D' = 0,000487$ $\quad S = \Delta \sin(\vartheta - \delta) + \frac{dl}{h}\cos(\alpha - \delta) = 0,000649$ $\quad S' = 0,000448$

$$\left(\frac{1}{h}\frac{\partial^2 V}{\partial x^2}\right)' = +0,000020$$

$$\left(\frac{1}{h}\frac{\partial^2 V}{\partial y^2}\right)' = -0,000467.$$

Csucsa - Dées - Kolozsvár

$\Delta = 0{,}000129$
$\beta = -32°$

Dési Ut Corr

$\delta = 7°$

× Dées
7°10 +11'
7°21'
2,149

× Csucsa
7°35' -34'
7°1'
2,150

$\frac{H}{h} = 0{,}000410$
$\alpha = 193°40'$

× Kolozsvár
7°5
2,175

$\delta = 7°$ $\quad \alpha = 193°40'$ $\quad \frac{H}{h} = 0{,}000410$

$\beta = -32°$ $\quad \Delta = 0{,}000129$

$$\frac{H}{h}\sin(\alpha-\delta) = \Delta\cos(\beta-\delta)$$

$-0{,}000047 \qquad +0{,}000100$

$$S = \Delta\sin(\beta-\delta) + \frac{H}{h}\cos(\alpha-\delta) = -0{,}000488$$

$$\operatorname{tg} 2\vartheta = \frac{\left(\frac{H}{h}\right)^2 \sin 2\alpha + \Delta^2 \sin 2\beta}{\left(\frac{H}{h}\right)^2 \cos 2\alpha + \Delta^2 \cos 2\beta} = 0{,}398 \qquad 2\vartheta = \begin{cases} 21°40' \\ 201°40' \end{cases} \qquad \vartheta = \begin{matrix} 10°50' \\ 100°50' \end{matrix}$$

$\vartheta = 100°40'$ $\quad D = \frac{H}{h}\cos(2\vartheta-\alpha-\delta) + \Delta\sin(2\vartheta-\beta-\delta) = 0{,}000317$

$$\operatorname{tg} 2\vartheta' = \frac{S\sin 2\vartheta - S_n \sin 2\vartheta_n}{S\cos 2\vartheta - S_n \cos 2\vartheta_n} = \frac{-0{,}000115 + 0{,}000218}{-0{,}000295 + 0{,}000230} = \frac{+0{,}000003}{-0{,}000065} = -0{,}046 \qquad 2\vartheta' = \begin{cases} 2°40' \\ 182°40' \end{cases}$$

$\vartheta' = 91°20'$ $\quad S' = \frac{S\sin 2\vartheta - S_n \sin 2\vartheta_n}{\sin 2\vartheta'} = 0{,}000065$

$$S' = S - S_n = -0{,}000488 + 0{,}000201 = -0{,}000287$$

$\left(\frac{1}{h}\frac{\partial^2 V}{\partial x^2}\right)' = -0{,}000111 \qquad \left(\frac{1}{h}\frac{\partial^2 V}{\partial y^2}\right)' = -0{,}000176.$

Обработка Ферма:

1 Берлин	$x_1 = +31$	$y_1 = +8$	$-0,0715$	δ
2 Потсдам	$x_2 = -3$	$y_2 = +44$	$+0,0179$	$a_2 - a_1 = -44$
3 Ваза	$x_3 = -15$	$y_3 = -40$	$+0,0070$	$a_3 - a_2 = -1$

$x_2 - x_1 = -34$ $\quad y_2 - y_1 = +36$

$x_3 - x_2 = -12$ $\quad y_3 - y_2 = -84$

$$A = \frac{44.84 + 36}{34.84 + 12.36} \qquad b = -\frac{12.44 - 34}{34.84 + 12.36}$$

$$A = \frac{3696 + 36}{3288} = \qquad b = -\frac{528 - 34}{3288} =$$

84 · 44 = 336 · 336 = 3696

44 · 12 = 88 · 44 = 528

3288 / 3732

3288 / 4940 +0,1502

3288 · 1520 · 16440 · 8000

$A = 1,135$ $\qquad b = -0,1502.$

$\operatorname{tg}\delta = -$

1435 / 1502 / 0,1323

1435 · 3670 · 3405 · 2650 · 2270 · 3800.

1420 · 730 · 22.

0,93

32. 0,000343. 32.

686 · 1029 · 3087 · 31899

0,0409776

0,000319

0,01020 / 35

638 · 957 · 10208 · 81 · 150

$A = 0,000343$ $\qquad \delta = -7^\circ 30'$

0,0225 · 1288 · 11310 · 1,145

a_1 $(a_1 - a)$

a_2 $(a_2 - a)$

$a_2 - a_1$ $\quad 0,000435$

$a_2 - a_1 = 0,00644$ $\qquad a_3 - a_2 = -0,01012$

$$\eta = \frac{-6,84 + 36.11}{3288}$$

$$b = + \frac{+72 + 11.34}{3288}$$

34 · 34 · 374 · 72 · 446

$\lambda = -0,03241$

$b = +0,13572$

$\alpha \operatorname{tg}\frac{1}{2}\delta = -0,2461 \quad = -13^\circ 50$

3288 / 4460 / 0,1357

3288 · 11720 · 9864 · 18560 · 16440 · 21200

$\alpha = 103^\circ 50'$ $\qquad \frac{\Delta\alpha}{h} =$

1357 / 3340 / 0,2461

2714 · 6260 · 5428 · 8320 · 6785 · 15350

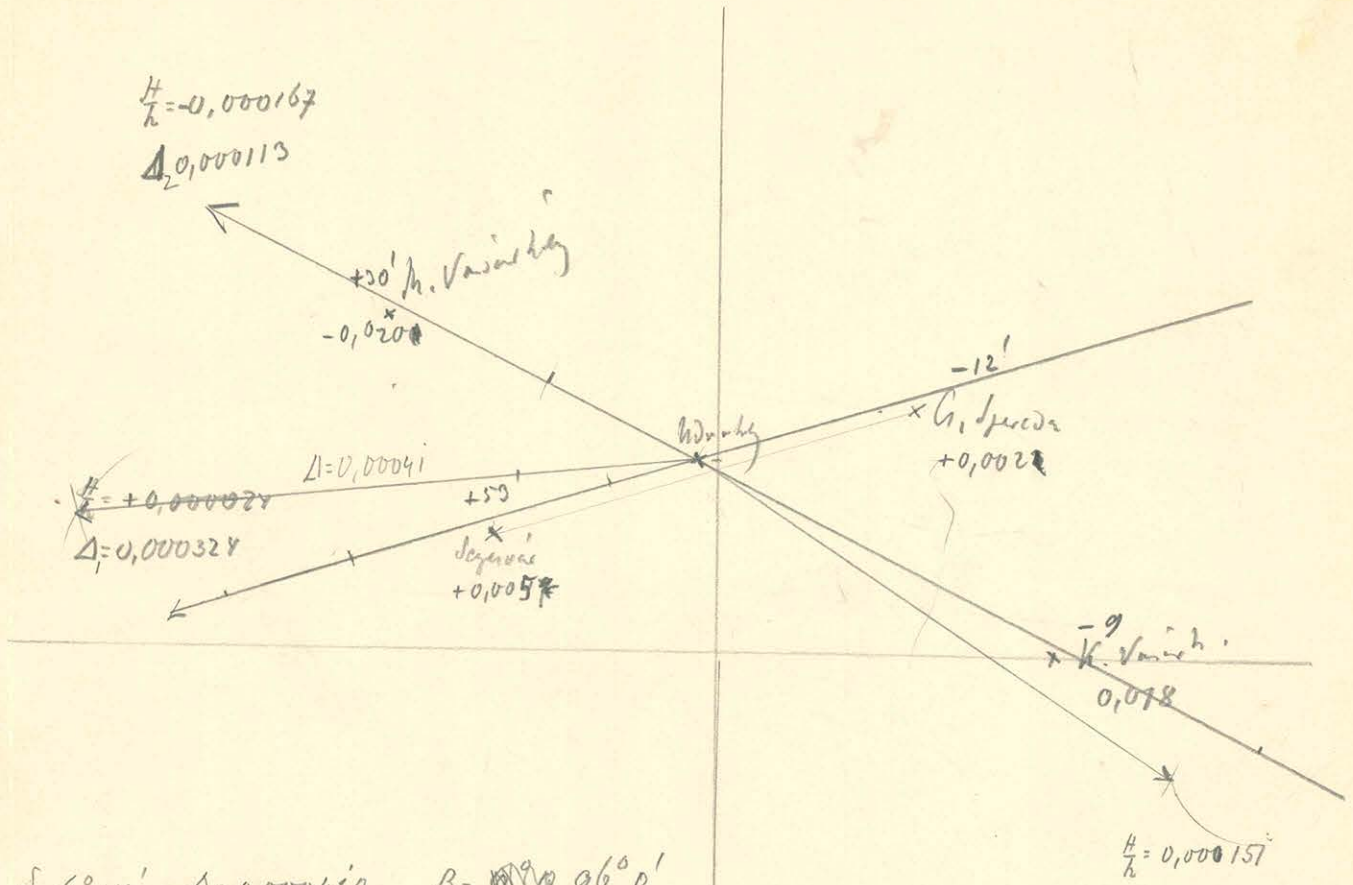
8320 · 8142 · 1780

$\frac{\Delta}{h} = 0,0000631$

$\frac{\Delta}{h}\sin(\alpha - \delta) + c\sin\delta = \Delta\cos(\beta - \delta)$

$0,0000627 + 0,0000254 \mid 0,000236$

Šiškův Hradiště



$\delta = 6°37'$ $\Delta = 0,000410$ $\beta = 96°0'$

$\frac{H}{h} = 0,000151$ $\alpha = 235°20'$

$\frac{H}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$

$-0,000113 + 0,000024 = 0,000011$

$-0,000113$

$k_2\vartheta = 0,676$ $2\vartheta = \begin{matrix}32°00'\\212°00'\end{matrix}$ $\vartheta = \begin{matrix}16°15'\\106°15'\end{matrix}$

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0,000107$ $\left(\frac{1}{h}\frac{\partial^2 V}{\partial y^2}\right)_0 = +0,000222$

$\vartheta = 16°$ ra

$k_2\vartheta' = \frac{D\sin 2\vartheta - D_2\sin 2\vartheta_2}{D\cos 2\vartheta - D_2\cos 2\vartheta_2} = \frac{-0,000175 + 0,000118}{-0,000280 + 0,000230} = \frac{-0,000057}{-0,000050}$

$D = 0,000329$ $\vartheta = 106°$ $D_2 = 0,000259$ $\vartheta_2 = 103°30'$

$k_2\vartheta' = 1,14$ $2\vartheta' = \begin{matrix}48°40\\228°40\end{matrix}$ $\vartheta' = \begin{matrix}24°20'\\114°20'\end{matrix}$

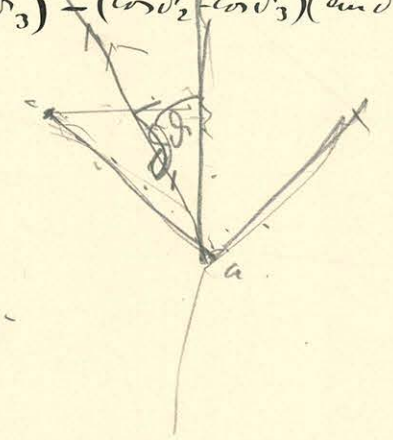
$D' = \frac{D\sin 2\vartheta - D_2\sin 2\vartheta_2}{\sin 2\vartheta'} = \frac{-0,000057}{-0,75} = 0,000076$

~~$S = 0,000017$~~ $S = +0,000107$

$$A(\cos\delta_1 - \cos\delta_2) + B(\sin\delta_1 - \sin\delta_2) = a_1 - a_2$$
$$A(\cos\delta_2 - \cos\delta_3) + B(\sin\delta_2 - \sin\delta_3) = a_3 - a_2$$

$$A(\cos\delta_1 - \cos\delta_2)(\sin\delta_2 - \sin\delta_3) - A(\cos\delta_2 - \cos\delta_3)\sin(\delta_1 - \sin\delta_2)$$
$$= (a_1 - a_2)(\sin\delta_2 - \sin\delta_3) - (a_3 - a_2)(\sin\delta_1 - \sin\delta_2)$$

$$A = \frac{(a_1 - a_2)(\sin\delta_2 - \sin\delta_3) - (a_3 - a_2)(\sin\delta_1 - \sin\delta_2)}{(\cos\delta_1 - \cos\delta_2)(\sin\delta_2 - \sin\delta_3) - (\cos\delta_2 - \cos\delta_3)(\sin\delta_1 - \sin\delta_2)}$$



$c\cos(\delta_1 - \delta)$

$$c r_1 \cos(\delta_1 - \delta) = a_1$$
$$\cos\delta r_1 \cos\delta_1 - c\sin\delta r_1 \sin\delta_1 = a_1$$
$$c\cos\delta x_1 - c\sin\delta y_1 = a_1$$
$$c\cos\delta x_2 - c\sin\delta y_2 = a_2$$

$$B = \frac{(a_1 - a_2)(x_2 - x_3) - (a_3 - a_2)(y_1 - y_2)}{(x_1 - x_2)(y_2 - y_3) - (x_2 - x_3)(y_1 - y_2)}$$

$c\cos\delta$

---

c $\qquad c\cos(\delta_1 - \delta) = a_1 - a$

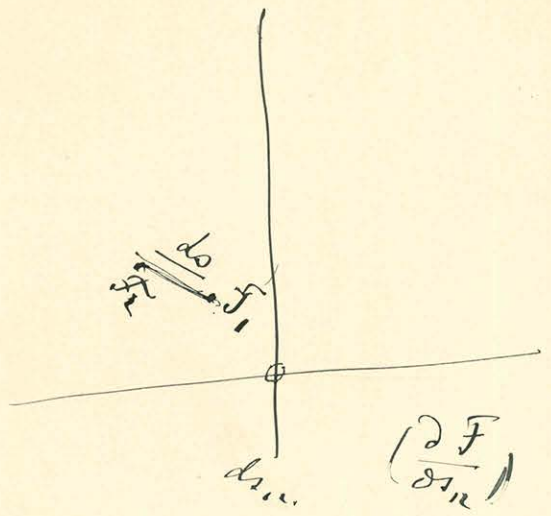
$$c\cos\delta\cos\delta_1 + c\sin\delta\sin\delta_1 = a_1 - a$$
$$c\cos\delta x_1 + c\sin\delta y_1 = a_1 - a$$
$$c\cos\delta x_2 + c\sin\delta y_2 = a_2 - a$$
$$c\cos\delta(x_2 - x_1) + c\sin\delta(y_2 - y_1) = a_2 - a_1$$

$c\cos\delta = A$
$c\sin\delta = B$

$$A(x_2 - x_1) + B(y_2 - y_1) = a_2 - a_1$$
$$A(x_3 - x_2) + B(y_3 - y_2) = a_3 - a_2$$

$$A = \frac{(a_2 - a_1)(y_3 - y_2) - (a_3 - a_2)(y_2 - y_1)}{(x_2 - x_1)(y_3 - y_2) - (x_3 - x_2)(y_2 - y_1)}$$

$$B = \frac{(a_2 - a_1)(x_3 - x_2) - (a_3 - a_2)(x_2 - x_1)}{(x_2 - x_1)(y_3 - y_2) - (x_3 - x_2)(y_2 - y_1)} = \frac{(a_3 - a_2)(x_2 - x_1) - (a_2 - a_1)(x_3 - x_2)}{(x_1 - x_1)(y_3 - y_2) - (x_3 - x_2)(y_2 - y_1)}$$



$x_1 y_1$

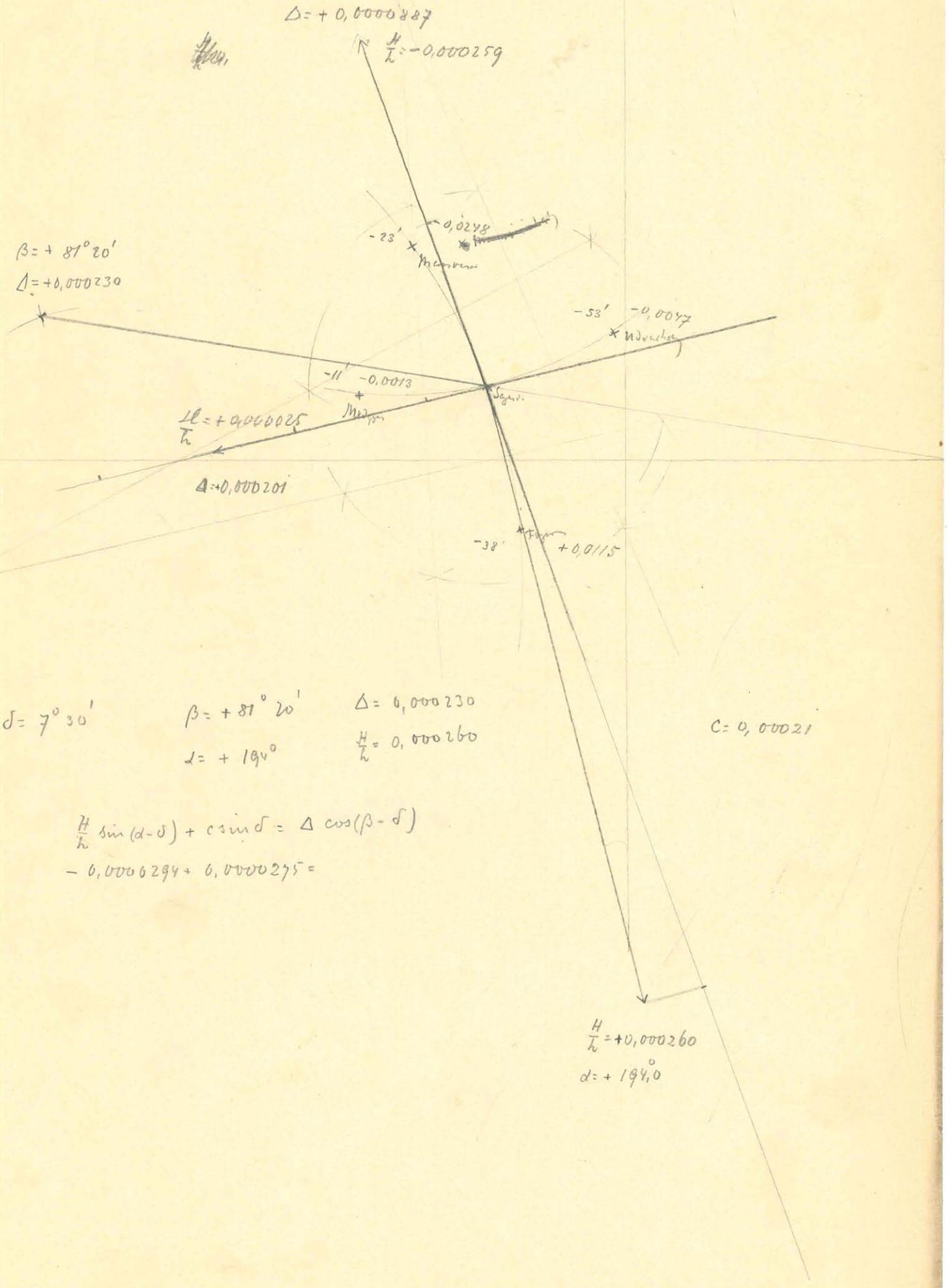
$x_n y_n$

$F(x,y)$ $F(x_i y_i)$
$(i = 1 \ldots n)$

$$F = ax^2 + 2bxy + cy^2$$

$$\frac{\partial F}{\partial x}$$

Segovia



$\delta = 7^\circ 30'$ $\quad \beta = +81^\circ 20'$ $\quad \Delta = 0,000230$

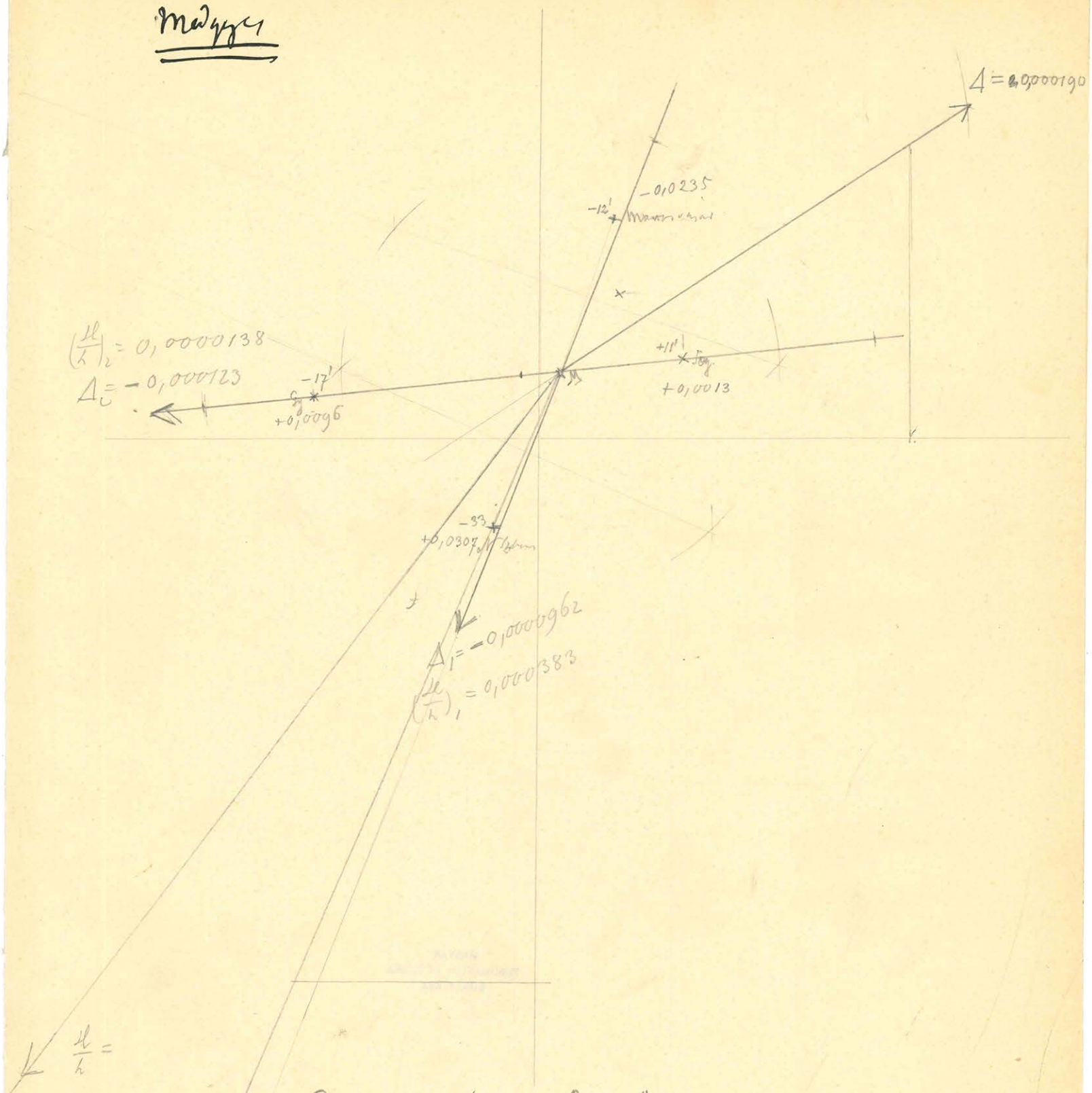
$\alpha = +194^\circ$ $\quad \frac{H}{h} = 0,000260$

$C = 0,00021$

$$\frac{H}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$$

$$-0,0000294 + 0,0000275 =$$

Медуза



$\delta = 7°20'$ $\beta = -57°$ $\Delta = 0,000190$ $C = 0,00021$

$\alpha = +156°$ $\frac{dl}{h} = 0,000390$

$\frac{dl}{h}\sin(\alpha-\delta) + C\sin\delta = \Delta\cos(\beta-\delta)$

$0,0000202 + 0,0000256 = 0,0000390$

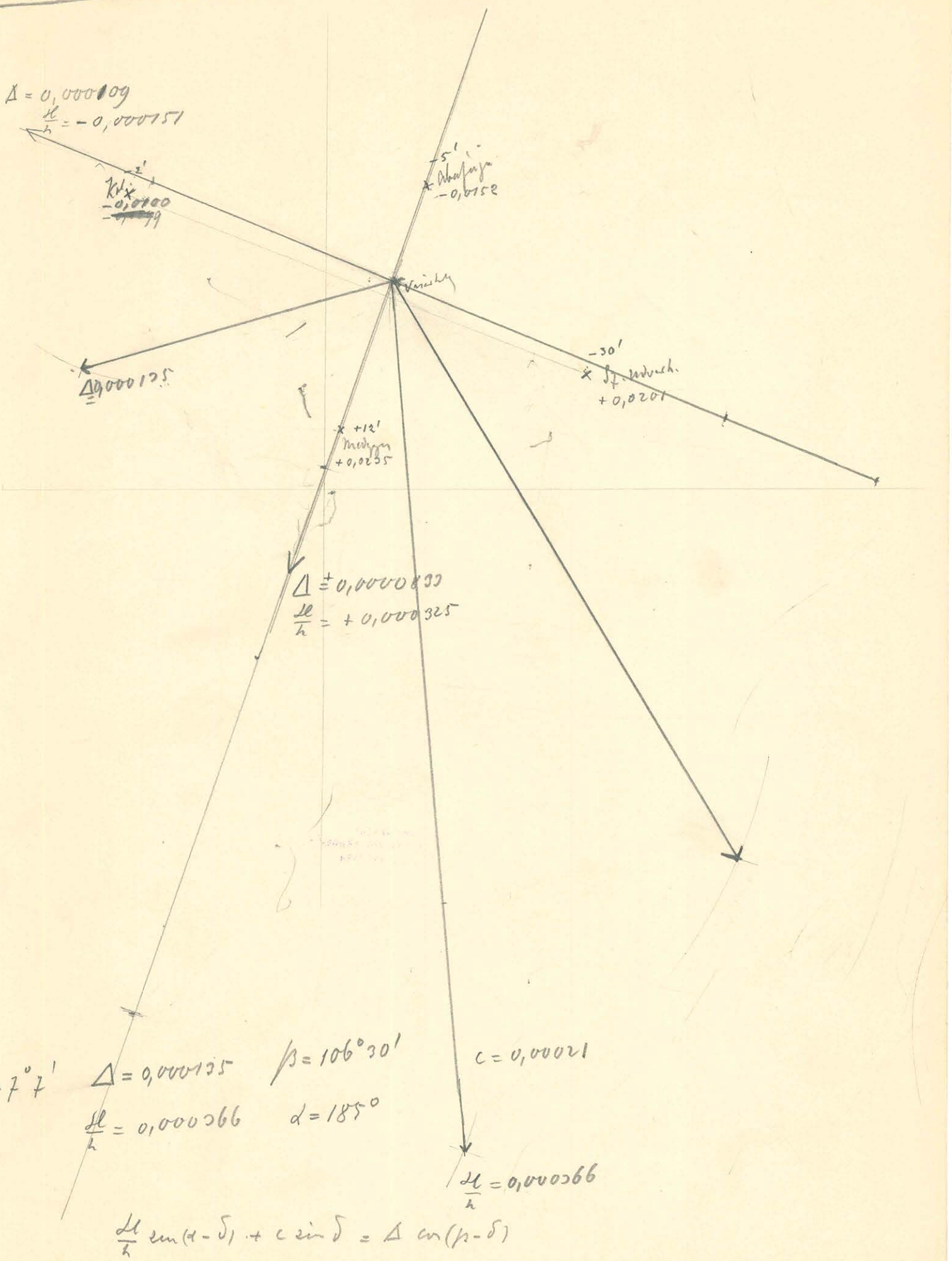
$0,0000458$

$\operatorname{tg} 2\vartheta = -0,335$ $2\vartheta = -18°30'$, $+161°30$ $\vartheta = \begin{cases} -9°20' \\ +80°40' \end{cases}$

$\vartheta = 80°40'$ и

$\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right) = -0,000308$ $\frac{1}{h}\frac{\partial^2 V}{\partial y^2} = -0,000407$

Mars Vénushely.



$$\frac{dl}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$$

Eötvös kísérlet II

$\delta = 7°$ $\beta = 90°$ $J = 0{,}000052$

$\ln \delta = 0{,}122$ $\frac{1}{R} \operatorname{tg} i = 0{,}000037$ $c = 0{,}000038$

$\alpha = 190°$ $\frac{\Delta l}{h} = 0{,}00025$

$\frac{\Delta l}{h}$ kísérleti úton a 2,210 és 2,180 vonalas közötti

$ax^2 = \Delta l$ formában

$a = 0{,}0000071$

$2ax$ a helyre $= \frac{\partial k}{\partial x} = 0{,}000056$

$\frac{\Delta l}{h} = 0{,}00025$

I) $\operatorname{tg} \alpha' = \frac{-0{,}0000432 - 0{,}0000457}{-0{,}00025 - 0{,}000037} = + \frac{0{,}0000882}{0{,}00062} = 0{,}14$ $\alpha' = 8°$

$+172°$

$A^2 = 0{,}000\,000\,0625 + 0{,}000\,000\,037 + 0{,}000\,000\,185$

$A^2 = 0{,}000\,000\,3840$

$A = 0{,}00062$

2) $\operatorname{tg} \beta' = \frac{0{,}000052 - 0{,}000037}{0{,}000044} = \frac{0{,}000150}{0{,}000044} = 3{,}4$ $\beta' = 74°$

$-106°$

$B^2 = 0{,}000\,002\,704 + 0{,}000\,000\,037 - 0{,}000\,000\,282$

$B^2 = 0{,}000\,002\,250$

$B = 0{,}00150$ $\beta' = 74°$

$A \sin(\alpha' - \delta) + c \sin \delta = B \cos(\beta' - \delta)$

$0{,}0000464$

Egy hurok

I) $\delta = 7°$ $\beta = 0$ $\gamma = 0{,}000277$

$\frac{1}{R} = 0{,}00021$ $i = 68°30'$ $\operatorname{tg} i = 1{,}767$.

$\sin \varepsilon = 0{,}0825$
$\sin \Gamma = 0{,}122$

$\frac{1}{R} \operatorname{tg} i = 0{,}00037$. $C = \frac{1}{R} \sin \varepsilon = 0{,}000038$

$\alpha = 175°$ $\frac{\Delta t}{t} = 0{,}00020$

1) $\operatorname{tg} \alpha' = \frac{0{,}0000174 - 0{,}0000451}{-0{,}00020 - 0{,}00037} = \frac{0{,}0000277}{0{,}00057} = 0{,}0486$ $\alpha' = +2°50$ $-177°10$

$A^2 = 0{,}000\,000\,040 + 0{,}000\,000\,137 + 0{,}000\,000\,156$

$A^2 = 0{,}000\,000\,333$

$A = 0{,}000\,58$

2) $\operatorname{tg} \beta' = \frac{0{,}000277 - 0{,}00037}{0{,}000277 \cdot 1{,}767 + 0{,}000044} = -\frac{0{,}000093}{0{,}000533} = -1{,}15$

$\beta' = -49°$ $+131°$

$b^2 = 0{,}000\,000\,767 + 0{,}000\,000\,137 - 0{,}000\,000\,039\,4$

$b^2 = 0{,}000\,000\,865$

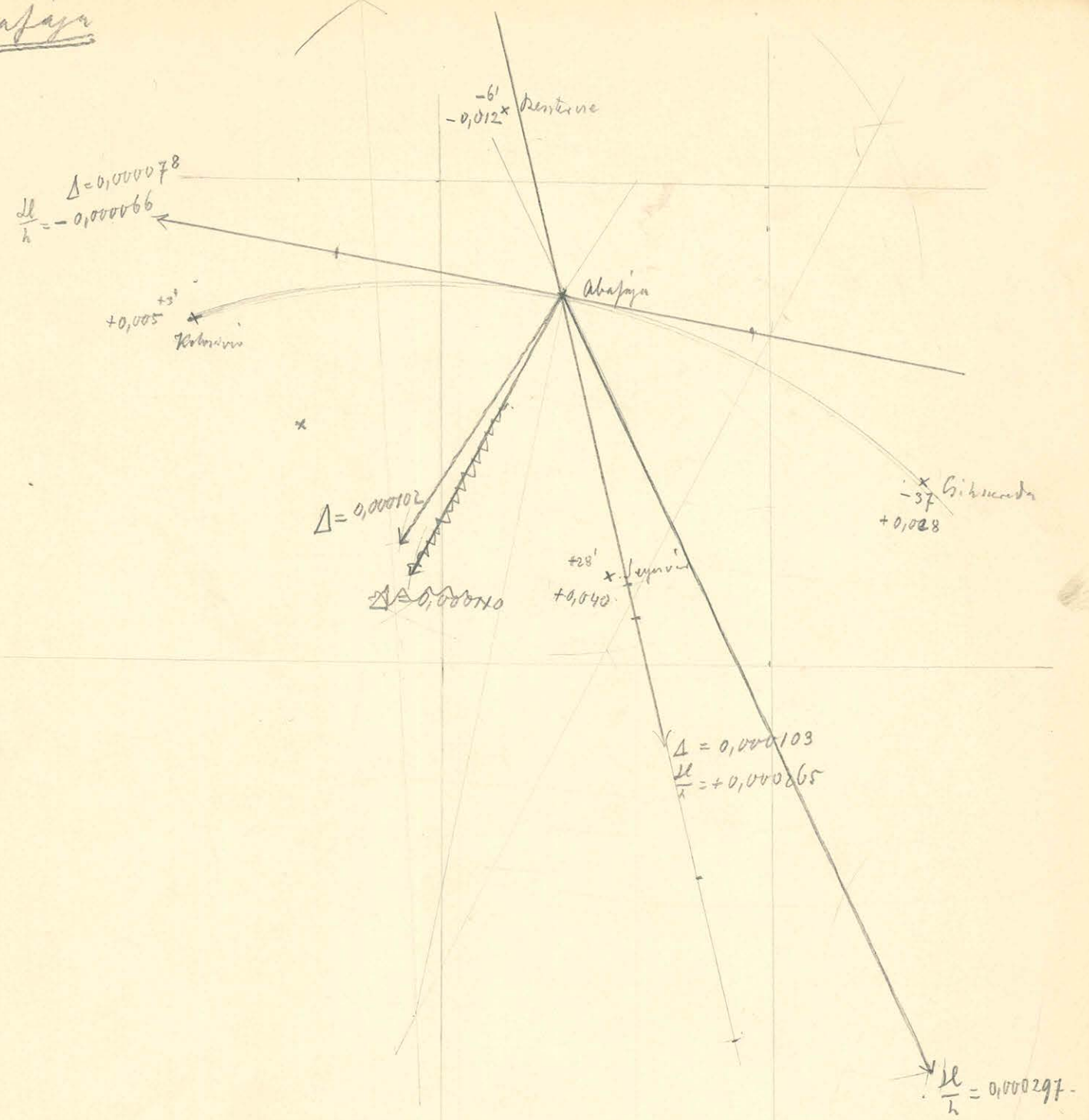
$b = 0{,}000\,93$

$A \sin(\alpha' - \delta) + C \sin \delta = b \sin(\beta' - \delta)$

$0{,}000\,086$ $0{,}000\,046\,4$ $0{,}000\,145$

$0{,}000\,145$

Abastája



$\delta = 7^0 2'$ $\quad \frac{ll}{h} = 0{,}000297$ $\quad \alpha = 205^\circ$

$u = 2{,}1700$ $\quad \Delta = 0{,}000102$ $\quad \beta = 146^\circ 30$ $\quad c = 0{,}00021$

$$\frac{ll}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos(\beta-\delta)$$

$$-0{,}0000918 + 0{,}0000256 = -0{,}0000775$$

$$-0{,}0000662$$

$\operatorname{tg} 2\vartheta = 1{,}313$ $\quad 2\vartheta = \begin{matrix} 52^\circ 40' \\ 232^\circ 40' \end{matrix}$ $\quad \vartheta = \begin{matrix} 26^\circ 20' \\ 116^\circ 20' \end{matrix}$

$\vartheta = 26^\circ 20'$ re $-\frac{1}{h}\left(\frac{\partial^2 V}{\partial x^2}\right)_0 = -0{,}000229$ $\quad \frac{1}{h}\left(\frac{\partial^2 V}{\partial y^2}\right)_0 = -0{,}0000097$

$D = 0{,}000232$ hyp. $\vartheta = 116^\circ 20'$ $\quad \vartheta_n = 0{,}000259$ $\quad \vartheta_n = 103^\circ 30'$

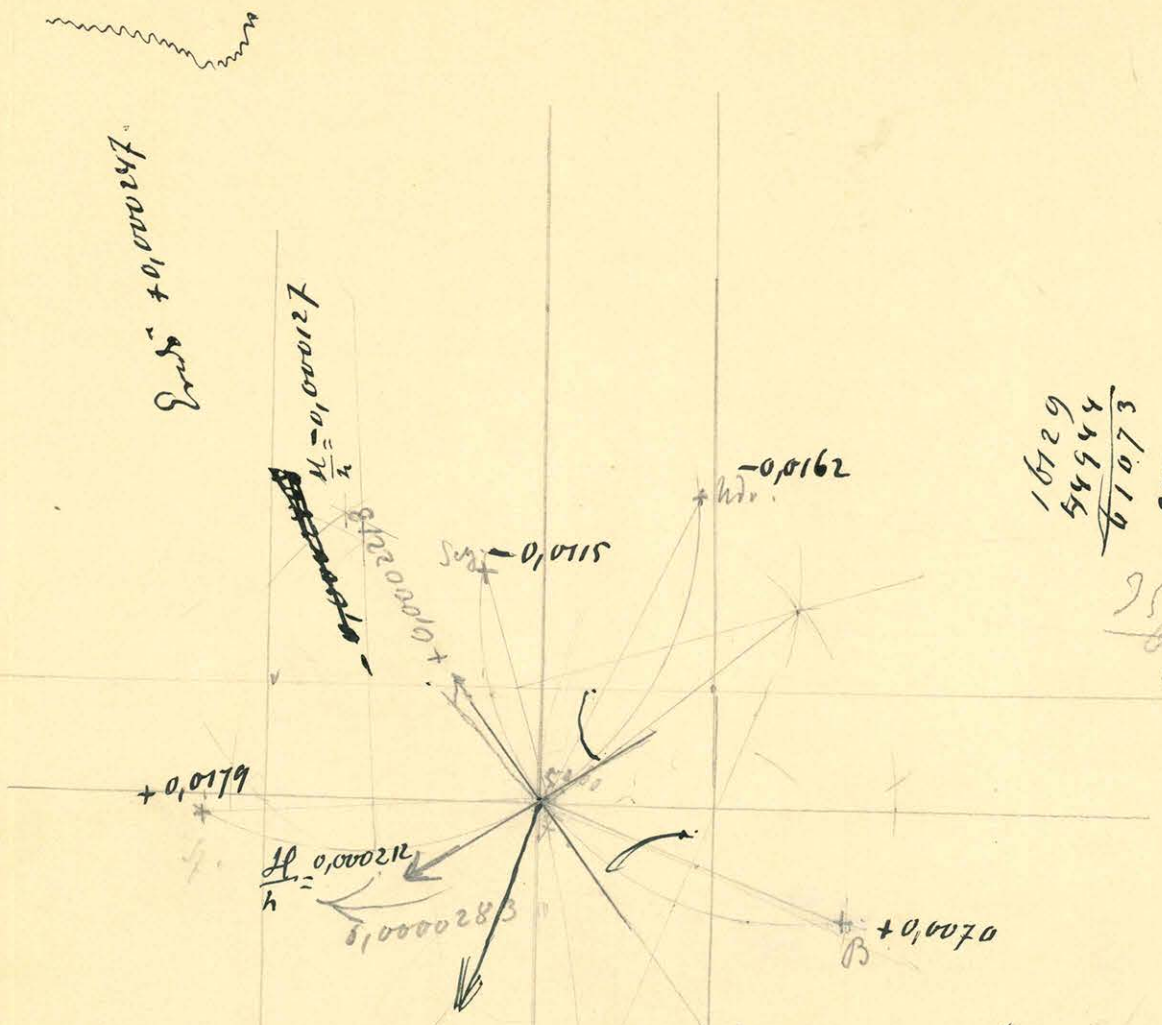
$$\operatorname{tg} 2\vartheta' = \frac{D\sin 2\vartheta - \vartheta_n \sin 2\vartheta_n}{D\cos 2\vartheta - \vartheta_n \cos 2\vartheta_n} = \frac{-0{,}000184 + 0{,}000118}{+0{,}000141 + 0{,}000231} = -\frac{66}{90}$$

$2\vartheta' = \begin{matrix} -36^\circ 20 \\ 143^\circ 40' \end{matrix}$ $\quad \vartheta' = \begin{matrix} -18^\circ 10 \\ +71^\circ 50 \end{matrix}$

$\vartheta' = -18^\circ 10$ $\quad \vartheta' = \frac{D\cos 2\vartheta - \vartheta_n \sin 2\vartheta_n}{\sin 2\vartheta'} = 0{,}000112$

$\Delta = 0,0002445$ $\beta = 41^\circ 30'$

$\alpha = 156^\circ$ $\frac{M}{h} = 0,000247.$



$\delta = 46$ $\alpha = -6$

$\delta = 46$ $\alpha = -15$

$a46 + 6.2116 = -6$

$-a46 + 6.2116 = -15$

$92a = 9$

$a = \frac{9}{92} = 0,0977$

$a46 + 1... = +0,0179$

$-a46 = -0,0762$

$92a = 0,0341$

$b = -0,00495$

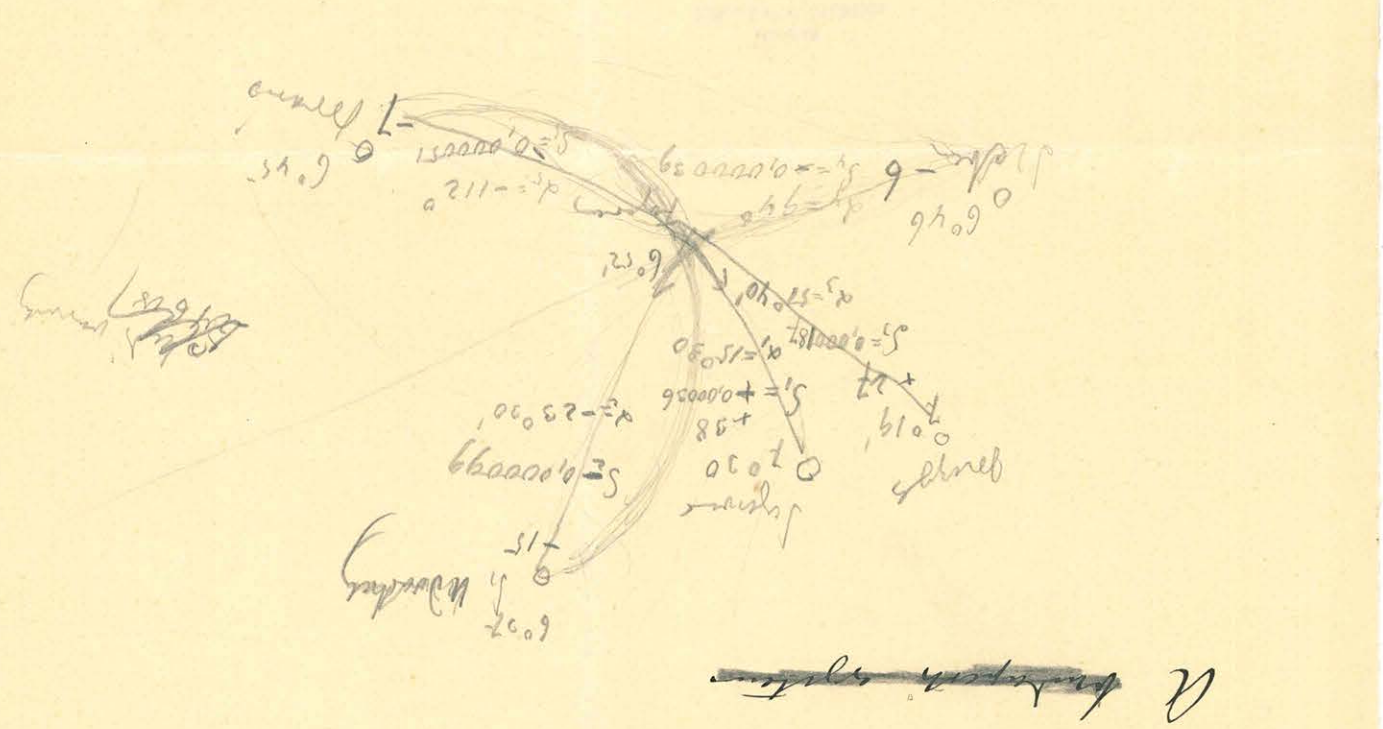
$-46a + 2116b = 0,0070$

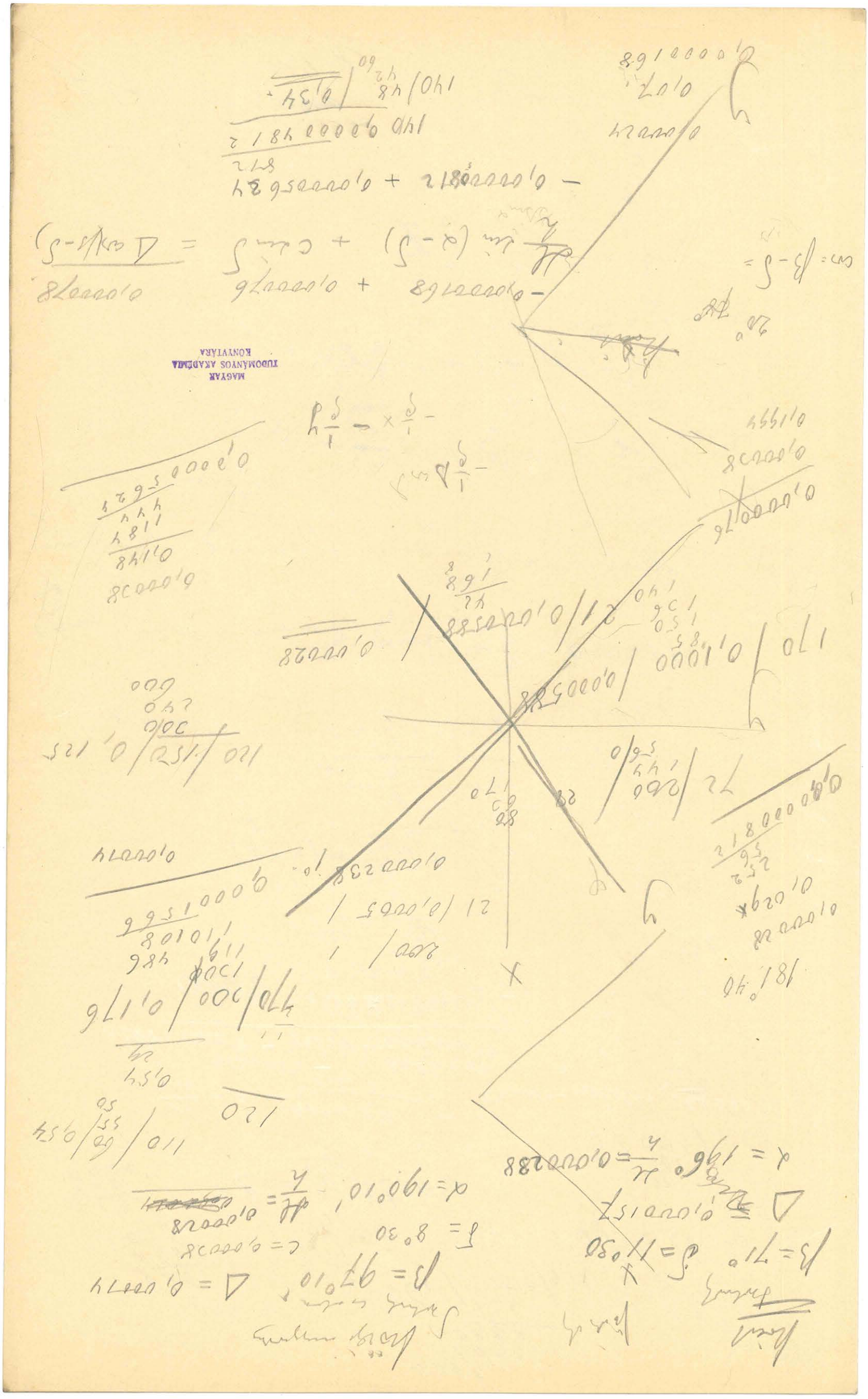
$+92a + 1024b = -0,0715$

$-2116 \cdot 0,0715 \overline{+} 0,0070 \cdot 1024$

$31,50$

$114,816$





R. 1,4

0,000015 / 1000 / 17

$\frac{1}{R}$

$$\frac{\partial h}{\partial s} = H\cos(\beta-\alpha) - \frac{Z}{R}\cos(\beta-\delta)$$

$$\frac{\partial H}{\partial s} = S\cos(\beta-\beta) - \frac{Z}{Rh}\sin(\beta-\delta)$$

$$\frac{\partial A}{\partial s} = H\cos\beta\cos\alpha + H\sin\beta\sin\alpha - \frac{Z}{R}\cos\beta\cos\delta - \frac{Z}{R}\sin\beta\sin\delta$$

$$= \left(H\cos\alpha - \frac{Z}{R}\cos\delta\right)\cos\beta + \left(H\sin\alpha - \frac{Z}{R}\sin\delta\right)\sin\beta$$

$$\begin{cases} tg\,\varepsilon = \dfrac{H\cos\alpha - \frac{Z}{R}\cos\delta}{H\sin\alpha - \frac{Z}{R}\sin\delta} \end{cases}$$

0,00021

$$\left(\frac{\partial A}{\partial s}\right)^2 = H^2 + \frac{Z^2}{R^2} - H\frac{Z}{R}\cos(\alpha-\delta)$$

$$\frac{1}{R} = \frac{1}{4800}$$

0,000078
0,000016

$$-0,000045 \cdot 1,927 - 0,00021$$

$$0,000045 \cdot 0,3746 - 0,00021 \cdot 1,078$$

$$0,000028 - 0,000076$$

$$-\frac{0,000300}{0,000014} = -\frac{300}{14}$$

$$h^2\left(0,000045^2 + 0,00021^2 - 0,000045 \cdot 0,1\right)$$

130 / 460 / 0,354

78 50

$$0,0175\,R = 84$$

2500 / 672 / 1818

84 / 0,0175 / 0,000208

700 / 672 / 80

956 / 1420 / 1,90

956

8640

8604

3600

$\frac{1}{R} =$

758 / 198 / 956

54 | 6

$\frac{6}{400}$

$c_x = \frac{6}{400}$ 556 / 224,00 / 57'30

70 | 12 | 21,4
$\frac{1}{6}$ | 10 | 149,8

150 / 0,0400 / 0,00027
100

30' / 20' / 6,7

0,000027
0,7
0,000020

$C = \frac{1}{3700}$

$\alpha = 190°$

$\frac{H}{h} = \frac{0,04}{214,70} = 0,00027$

$\delta = 9°$

$\beta = 100°$

$\Delta = 0,7' \times 29 = 0,00020$
9,000

$0,00027 \cdot \frac{1}{3700} \cdot 0,156 = ? \; 0,00020 \times$

1) kurb.

$c = \frac{1}{3700}$ $\beta = 0$ $\Delta = 0,00027$ $\delta = 7°$

22/20 22/580 / 27 / 0,00027
44
158

$\alpha = 160°$ $\frac{H}{h} = \frac{1}{200.20} = \frac{1}{4000}$ 0,00025

$\Gamma = 10$

$c = \frac{1}{3700}$ $\beta = -25°$ $\Delta = 0,00029$

$\frac{H}{h} = \frac{1}{3500}$

~~$-H \sin\alpha$~~
$+H \sin\alpha \cos\delta + h \sin\delta (\Delta \sin\beta + c \cos\beta)$
$H \sin\alpha \cos\delta - h\Delta \sin\delta \sin\beta + hc \sin\delta$
$= H \cos\alpha \sin\delta + H \cos\delta \cos\beta$

$H \sin(\alpha - \delta) + hc \sin\delta = h\Delta \cos(\delta - \beta)$

$C = \frac{1}{7154}$ $\quad \delta = 4°30'$ $\quad + \Delta = 0,253 = 0,000102$ $\quad 1' = 0,000291$ $\quad + \beta = 42°$

$\alpha = 158°$ $\quad \frac{u}{h} = \frac{0,00025}{2,96} = 0,0000845$

$\cos\beta = 0,7432$
$\cos\alpha = -0,9272$
$\sin\beta = 0,6691$
$\sin\alpha = 0,3746$
$\eta\delta = 0,0787$

$\frac{1}{R} = 0,000208$
$\eta = 1,2$
$\frac{1}{R}\eta = 0,00025$

$$\frac{\frac{7}{100000} + \frac{8}{100000}\cdot\frac{70}{1000}}{\frac{14}{1000000} + \frac{8}{100000} - \frac{7}{100000} - \left(\frac{3}{10000} + \frac{7}{100000}\right)\frac{78}{1000}}$$

$\delta = 13'$

$\frac{4-7\operatorname{tg}\delta}{6} = \frac{7}{15}$ $\quad \frac{4}{6}$

45°

$$\frac{u}{h}\sin(\alpha-\delta) + c\sin\delta = \Delta\cos\beta - \delta$$

$- 0,0000845 \times 0,4462 + \frac{1}{7154}\,0,07870 =$

0,446
5070
2280
22680
37687

$7154 \,/\, 0,07870 \,/\, 0,000011$
7154
7160

$+ 0,0000376$
$+ 0,0000110$
$0,0000486$
$0,0000487$

$0,000102$

1,43 · 6,700
268
67
9,38

MAGYAR TUDOMÁNYOS AKADÉMIA KÖNYVTÁRA

$C = \frac{1}{9,280000}$ $\quad$ Tokura $\quad \beta = 0$

$C = \frac{1}{7154}$ $\quad \delta = 4°38'$ $\quad \Delta = 0,266 \times 0,000291 = 0,000106$ $\quad \beta = 0$

$\alpha = 165°$ $\quad \frac{u}{h} = \frac{0,0005}{3} = -0,00017$

$\cos\alpha = 0,965$
$\sin\alpha = 0,259$
$\cos\beta = 1$
$\sin\beta = 0$
$\eta\delta = 0,081$

9,0005

10,000,000

$$\eta 2\vartheta = \frac{\frac{106}{m} - \frac{13}{m}}{\frac{140}{m} - \frac{165}{m} - \left(\frac{41}{m} + \frac{106}{m}\right)\frac{81}{1000}} = -\frac{97}{37} = 2,6$$

$- \frac{12}{m}$

$2\vartheta = 158°$

$\vartheta = 79°$

$\frac{1}{7154} \cdot 1400$
14
28616
7154
10015600
14

82 / 110000 / 1400
30

$0,00017 \times 0,18 + 0,000011$
$0,000031 + 11$

$\alpha = 158$ $\frac{\partial \mu}{\partial x} = 0{,}000082$

$\beta = 52°$ $\frac{\partial \gamma}{\partial x} = 0{,}000104$

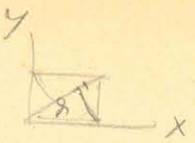
202 / 0,08
3 / 0,00025 / 83
10

$\alpha = 158°$ $\frac{\partial \mu}{\partial x} = 0{,}000082$

83 / 30'0 / 1,36
249 29
510 324
578 72
1044

0,00029

76 / 99 / 19
76
230
228



$$\frac{\partial^2 V}{\partial x^2} = -\frac{1}{x^2} + 3\frac{x^2}{x^5}$$

$$\frac{\partial^2 V}{\partial \vartheta^2} =$$

$$x = \xi\cos\vartheta \quad y = \xi\sin\vartheta$$

$$\frac{dx}{d\xi} = \cos\vartheta$$

$$\frac{\partial V}{\partial \xi} = \frac{\partial V}{\partial x}\cos\vartheta + \frac{\partial V}{\partial y}\sin\vartheta$$

$$\frac{\partial^2 V}{\partial \xi^2} = \frac{\partial^2 V}{\partial x^2}\cos^2\vartheta + \frac{\partial^2 V}{\partial x \partial y}\sin\vartheta\cos\vartheta + \frac{\partial^2 V}{\partial x \partial y}\sin\vartheta\cos\vartheta + \frac{\partial^2 V}{\partial y^2}\sin^2\vartheta$$

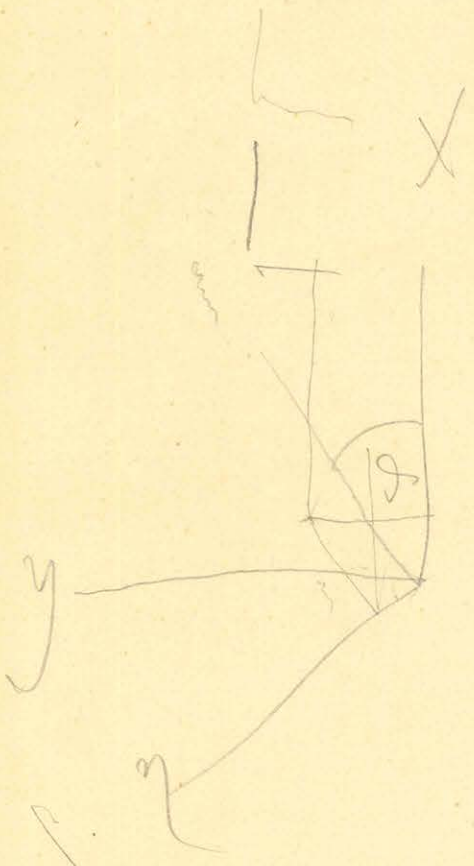
$$\frac{\partial^2 V}{\partial \xi^2} = \frac{\partial^2 V}{\partial x^2}\cos^2\vartheta + \frac{\partial^2 V}{\partial y^2}\sin^2\vartheta + \frac{\partial^2 V}{\partial x \partial y}\sin 2\vartheta$$

$$\frac{\partial^2 V}{\partial \eta^2} = \frac{\partial^2 V}{\partial x^2}\sin^2\vartheta + \frac{\partial^2 V}{\partial y^2}\cos^2\vartheta - \frac{\partial^2 V}{\partial x \partial y}\sin 2\vartheta$$

$$\frac{\partial^2 V}{\partial \xi^2} - \frac{\partial^2 V}{\partial \eta^2} = \left(\frac{\partial^2 V}{\partial x^2} - \frac{\partial^2 V}{\partial y^2}\right)\cos 2\vartheta + 2\frac{\partial^2 V}{\partial x \partial y}\sin 2\vartheta$$

---

ha $\frac{\partial^2 V}{\partial x \partial y} = 0$ akkor..



$$\left(\frac{\partial^2 V}{\partial x^2} - \frac{\partial^2 V}{\partial y^2}\right)\sin 2\vartheta =$$

$$c = \frac{i}{\text{régió}}$$

$$y = \xi\sin\vartheta + \eta\cos\vartheta$$

$$i - c\xi\sin\vartheta - c\eta\cos\vartheta - \vartheta$$

$$\frac{\partial V}{\partial \xi} = H\cos(i - \vartheta - c\xi\sin\vartheta - c\eta\cos\vartheta)$$

$$\frac{\partial V}{\partial \eta} = H\sin(\quad)$$

$$\left(\frac{\partial^2 V}{\partial \xi^2}\right)_0 = \frac{\partial H}{\partial \xi}$$

$$\frac{\partial H}{\partial \xi} = h\cos(\vartheta - \gamma)$$

$$\frac{\gamma_i}{\partial \xi} = J\cos(\vartheta - \beta)$$

$$\left(\frac{\partial^2 V}{\partial \xi \partial \eta}\right)_0 = \frac{\partial H}{\partial \eta}\cos(i - \vartheta) - H\sin(i - \vartheta)\left(\frac{\partial i}{\partial \eta} - c\sin\vartheta\right)$$

$$\left(\frac{\partial V}{\partial \xi \partial \eta}\right)_0 = \frac{\partial H}{\partial \xi}\sin(i - \vartheta) + H\cos(i - \vartheta)\left(\frac{\partial i}{\partial \xi} - c\sin\vartheta\right)$$

Forma mutatv.

$\delta = \gamma°\,30$ $\quad J = 0,0077\,02$ $\quad \beta = \gamma\,2°$

$\frac{H}{R} = 0,0770\,845$ $\quad \alpha = 15\,8°$ $\quad \frac{1}{R}\,\eta' = 0,0\,\gamma\,25$

$\cos\beta = 0,7\gamma\,32$

$\omega\,\alpha = -0,92\,72$ $\quad \frac{1}{R} = 0,0\gamma\,2\,08$

$\mu\,\beta = 0,6\,6\,91$

$\omega\,\varepsilon = 0,37\,76$

$\eta\,J = 0,07\,87$ $\quad \eta' = 1,2$

---

1) $\eta\,\alpha' = \dfrac{0,0\,0\,0\,3\,19 - 0,0\,7\,7\,0\,198}{-0,0\,7\,7\,0\,782 - 0,0\,7\,8\,25} = -\dfrac{0,121}{3,29} = -0,037$

$\alpha' = (-2°\,10'$
$+172°\,50'$

$\Lambda' = 0,0\,7\,7\,\gamma$ $\quad 0,0\,7\,2\,6$ $\quad + 0,0\,7\,0\,0\,7\,2$ $\quad \frac{76}{38}$

$= \cancel{0,0\,7\,7\,\gamma\,6}$

$\Lambda' = 0,0\,7\,7\,\gamma\,6$ $\quad \alpha' = 172°\,50'$

$\Lambda = 0,0\,7\,7\,\gamma\,6$ $\quad \lambda = 0,0\,7\,7\,38$

---

2) $\eta\,\beta' = \dfrac{0,0\,7\,7\,6\,82 - 0,0\,7\,7\,0\,25}{0,0\,7\,7\,0\,75^2 + 0,0\,7\,7\,7\,9^2} = -\dfrac{0,0\,7\,8\,2\,0}{0,0\,7\,7\,0\,9\,5\,6} = -1,90\,\gamma$

$\beta' = -63°$

$\beta' = +112°$

$\beta^2 = 0,0\,7\,7\,0\,7\,7\,0\,\gamma + 0,0\,7\,7\,0\,7\,7\,0\,6\,25 - \cancel{0,0\,7\,7\,0\,7\,7\,0\,5}$

$\beta^2 = 0,0\,7\,7\,7\,7\,0\,\gamma\,\gamma$

$\beta = \pm\,0,0\,7\,7\,0\,7\,0\,6$

$\frac{\alpha}{71°\gamma}$ $\quad \beta' = 63°$ $\quad \beta = 0,0\,7\,7\,0\,7\,0\,6$

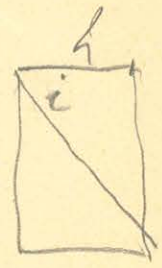
$\cancel{\beta}\,\omega(\alpha'-\delta) + c\,\omega\,\delta = \Omega\,3\,\sigma\,\sigma(\beta'-\delta)$

$0,0\,7\,7\,93 \cdot 0,1167 + 0,0\,7\,0\,0\,0\,11 = \beta\,.\,0,3\,827$

$$\frac{dH}{d\rho} = \frac{dH}{ds}\cos(\vartheta-\alpha) - \frac{z}{R}\cos(\vartheta-\delta)$$

$h\,\mathrm{tg}\,i = z$

$$\frac{di}{d\rho} = J\cos(\vartheta-\beta) - \frac{z}{R\cdot h}\sin(\vartheta-\delta)$$



$$\frac{dh}{ds} = H\cos(\vartheta-\alpha) - \frac{z}{R}\cos(\vartheta-\delta)$$

$$\frac{1}{h}\frac{dh}{ds} = \frac{H}{h}\cos(\vartheta-\alpha) - \frac{1}{R}\mathrm{tg}\,i\cos(\vartheta-\delta) \quad 1)$$

$$\frac{di}{ds} = J\cos(\vartheta-\beta) - \frac{1}{R}\mathrm{tg}\,i\sin(\vartheta-\delta) \quad 2)$$

$$\frac{H}{h}\cos\vartheta\cos\alpha + \frac{H}{h}\sin\vartheta\sin\alpha - \frac{1}{R}\mathrm{tg}\,i\cos\vartheta\cos\delta - \frac{1}{R}\mathrm{tg}\,i\sin\vartheta\sin\delta$$

$$\frac{H}{h}\cos\vartheta\cos\alpha + \frac{H}{h}\sin\vartheta\sin\alpha - \frac{1}{R}\mathrm{tg}\,i\cos\vartheta\cos\delta - \frac{1}{R}\mathrm{tg}\,i\sin\vartheta\sin\delta = A\cos\vartheta\cos\alpha' + A\sin\vartheta\sin\alpha'$$

$$A\cos\alpha' = \frac{H}{h}\cos\alpha - \frac{1}{R}\mathrm{tg}\,i\cos\delta$$

$$A\sin\alpha' = \frac{H}{h}\sin\alpha - \frac{1}{R}\mathrm{tg}\,i\sin\delta$$

$$\mathrm{tg}\,\alpha' = \frac{\frac{H}{h}\sin\alpha - \frac{1}{R}\mathrm{tg}\,i\sin\delta}{\frac{H}{h}\cos\alpha - \frac{1}{R}\mathrm{tg}\,i\cos\delta}$$

$$A^2 = \left(\frac{H}{h}\right)^2 + \frac{1}{R^2}\mathrm{tg}^2 i - 2\frac{H}{h}\frac{1}{R}\mathrm{tg}\,i\cos(\alpha-\delta)$$

$\left.\begin{array}{l}\\ \\ \\ \\ \end{array}\right\}$ 1)

$H = \frac{H}{h}$

$$J\cos\vartheta\cos\beta + J\sin\vartheta\sin\beta - \frac{1}{R}\mathrm{tg}\,i\cos\vartheta\cos\delta + \frac{1}{R}\mathrm{tg}\,i\cos\vartheta\sin\delta = B\cos\vartheta\cos\beta' + B\sin\vartheta\sin\beta'$$

$$B\cos\beta' = J\cos\beta + \frac{1}{R}\mathrm{tg}\,i\sin\delta$$

$$B\sin\beta' = J\sin\beta - \frac{1}{R}\mathrm{tg}\,i\cos\delta$$

$$\mathrm{tg}\,\beta' = \frac{J\sin\beta - \frac{1}{R}\mathrm{tg}\,i\cos\delta}{J\cos\beta + \frac{1}{R}\mathrm{tg}\,i\sin\delta}$$

$$B^2 = J^2 + \frac{1}{R^2}\mathrm{tg}^2 i - 2\frac{J}{R}\mathrm{tg}\,i\sin(\beta-\delta)$$

$\left.\begin{array}{l}\\ \\ \\ \\ \end{array}\right\}$ 2)

Zadanie domowe III

$\delta = 2^\circ \qquad \vartheta = 0$

$\omega_{sd} = 0{,}122 \qquad \frac{1}{R} \gamma_t' = 0{,}0002 \qquad c = 0{,}0028$

$\alpha = 183{,}0 \qquad \frac{\alpha L}{\lambda} = 0{,}00264$

1) $\gamma_1 \alpha' = \frac{-0{,}0003212 - 0{,}0001371}{-0{,}0002264 - 0{,}0000212} = \frac{0{,}0000768}{0{,}0001752} = 0{,}105 \qquad \alpha' = \begin{cases} 6^\circ \\ -174^\circ \end{cases}$

$A^2 = 0{,}0000001225 + 0{,}0000001212 - 0{,}0000002649$

$\lambda_1 = 0 \qquad \lambda_2 = 0$

2) $\gamma_1 \beta' = \frac{-0{,}0001212}{+0{,}0000264} = -8{,}41 \qquad \beta' = \begin{cases} -83^\circ 29' \\ +92^\circ \end{cases}$

$\beta^2 = 0{,}0001201213$

$\beta = 0{,}0001212$

$$\left(\left(\frac{1}{\rho_2}-\frac{1}{\rho_1}\right)\sin\alpha\cos\alpha\right)^2+\left(\frac{\cos^2\alpha}{\rho_1}+\frac{\sin^2\alpha}{\rho_1}\right)^2$$

$$\frac{\sin^2\alpha\cos^2\alpha}{\rho_2^2}+\frac{\sin^2\alpha\cos^2\alpha}{\rho_1^2}+\frac{2}{\rho_1\rho_2}\sin^2\alpha\cos^2\alpha$$

$$\frac{\sin^4\alpha}{\rho_2^2}+\frac{\cos^4\alpha}{\rho_1^2}+2\frac{2}{}$$

$$\cos^2\alpha$$

1

1/3

98
38
304
114
144
127
271

0,000062
0,0175

0947
1915
5860

99
99
1089

44
176
176
1936

0,000001

II

$a\,\overline{33}^2 = 20$

$a = \frac{20}{1089}$ 1936

1089 / 38720

0,00038

33

$\frac{3}{4}$ 9

ax^2

$\overline{33}^2 a$ 1089

$\overline{44}^2 a$

$ax^2 =$

$2000a = 40'$

$a = \frac{1}{50}'$

50/66 / 132
16 29
10 1188
264
3828

0,000 000 382 848

3828
1188
264

0,000 000 7

0,000 000 170 4

0,000 000 185

0,000 000 37

0,000 000 185

0,000 000 170 4

25 / 0,020 / 0,0008

24 8
25000 10000

22 / 0,000880 / 0,0000364.

06
140
132
80

364
0,087
2548
2912
0,000031668

26 / 0,0208 / 0,000027

182
180

451
317
768

44 / 270 / 841
352
180
176
40

22 / 770 / 35
110
110

724 / 768 / 0,105
3400

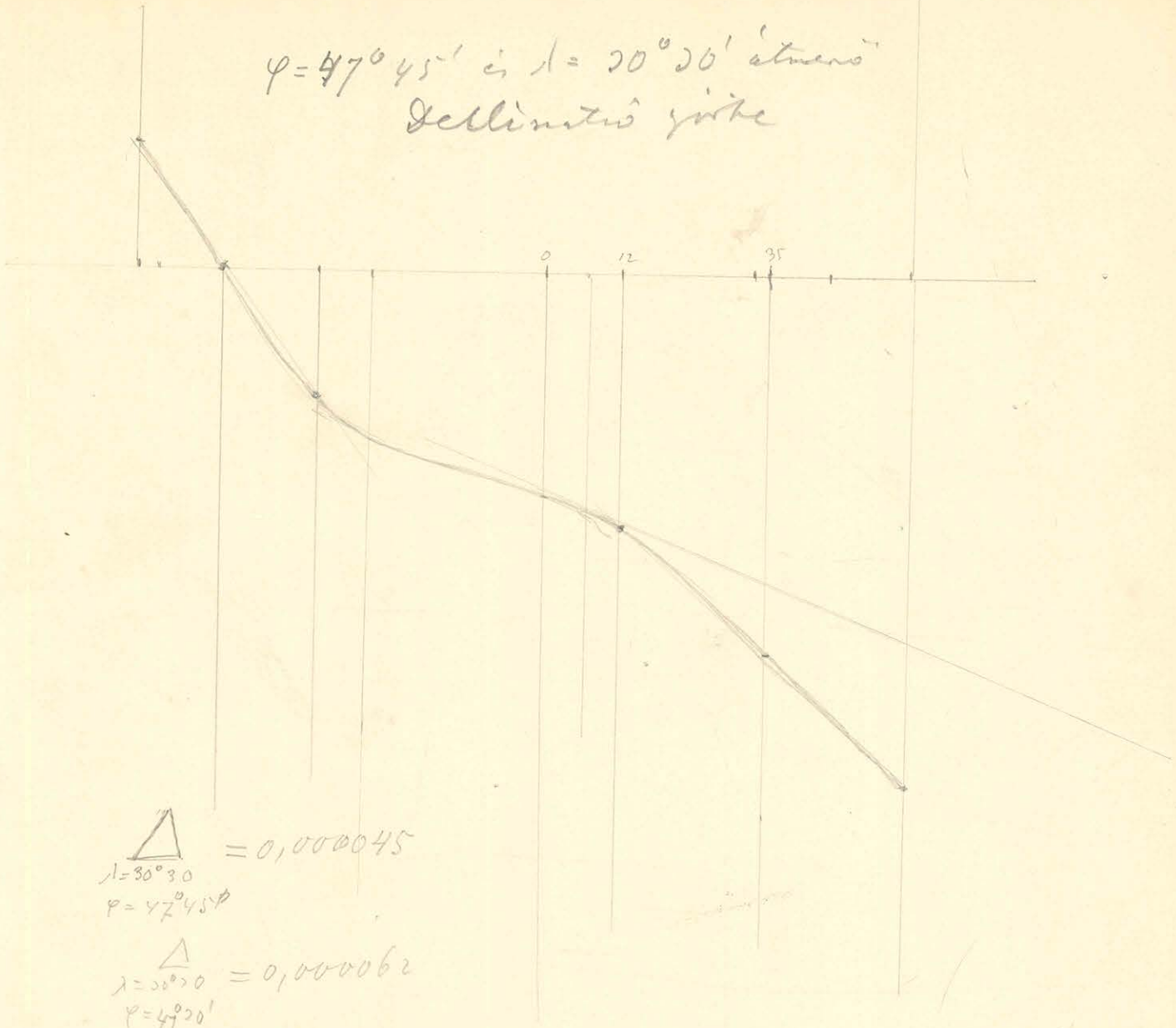
122496
0,000364
0,000074
1456
2548
0,000000269 36

1325
137
1695

20°	30° 30′	31°	31° 30′	
Δ = 181 Hz = 251 J = 161	Δ = 171 Hz = 258 J = 171	Δ = 271 Hz = 213 J = ~~152~~ 174	Δ = 188 Hz = 212 J = 145	49° 20′
Δ = 152 Hz = 234 J = 152	Δ = 142 Hz = 232 J = 166	Δ = 261 Hz = 223 J = 62	Δ = 175 Hz = 232 J = 97	49° 10′
Δ = 121 Hz = 234 J = 145	Δ = 142 Hz = 244 J = 97	Δ = 345 Hz = 295 J = 148	Δ = 183 Hz = 332 J = 159	49°
Δ = 126 Hz = 244 J = 132	Δ = 142 Hz = 256 J = 161	Δ = 290 Hz = 470 J = 261	Δ = 183 Hz = 370 J = 241	48° 50′
Δ = 145 Hz = 234 J = 127	Δ = 132 Hz = 223 J = 181	Δ = 210 Hz = 238 J = 238	Δ = 129 Hz = 256 J = 203	48° 40′
Δ = 153 Hz = 224 J = 145	Δ = 126 Hz = 223 J = 161	Δ = 161 Hz = 223 J = 161	Δ = 138 Hz = 213 J = 73	48° 30′
Δ = ~~161~~ Hz = 205 J = 188	Δ = ~~98~~ Hz = 205 J = 94	Δ = 111 Hz = 213 J = ~~46~~	Δ = 182 Hz = 183 J = 36	48° 15′
Δ = 174 Hz = 285 J = 102	Δ = 65 Hz = ~~285~~ 250 J = 46	Δ = 122 Hz = 256 J = ~~46~~ 110	Δ = 165 Hz = 256 J = 100	48° 00′
Δ = ~~87~~ Hz = 256 J = 116	Δ = 45 Hz = 341 J = 174	Δ = 102 Hz = 430 J = 145	Δ = 145 Hz = 365 J = ~~145~~ 121	47° 45′
Δ = 68 Hz = 270 J = 187	Δ = 62 Hz = 320 J = 181	Δ = 102 Hz = 360 J = 110	Δ = 102 Hz = 360 J = ~~110~~ 145	47° 30′

$\varphi = 47^\circ 45'$ és $\lambda = 30^\circ 30'$ átmenő

Delinatió görbe



Δ $\lambda = 30^\circ 30'$ $\varphi = 47^\circ 45'$ $= 0,000045$

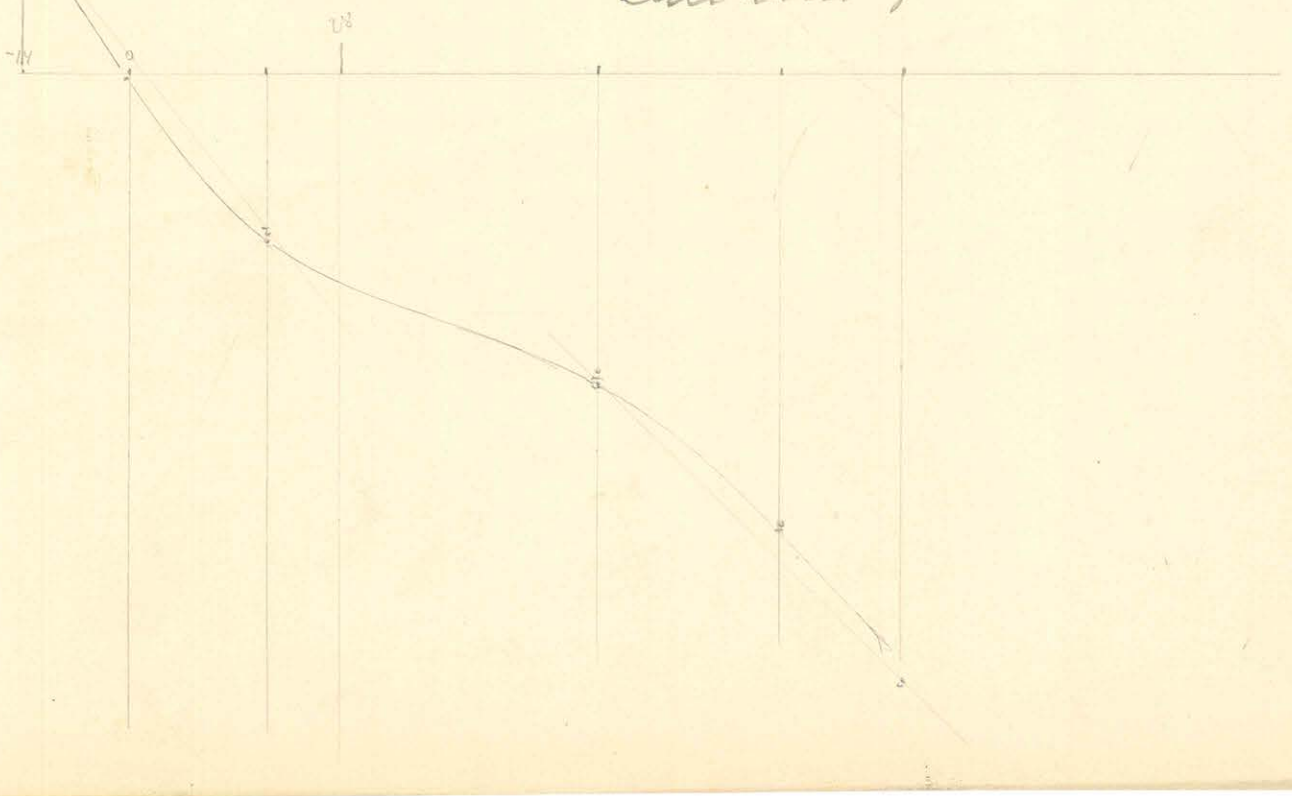
Δ $\lambda = 30^\circ 30$ $\varphi = 49^\circ 30'$ $= 0,000062$

Δ $\lambda = 30^\circ 0'$ $\varphi = 47^\circ 45'$ $= 0,000081$

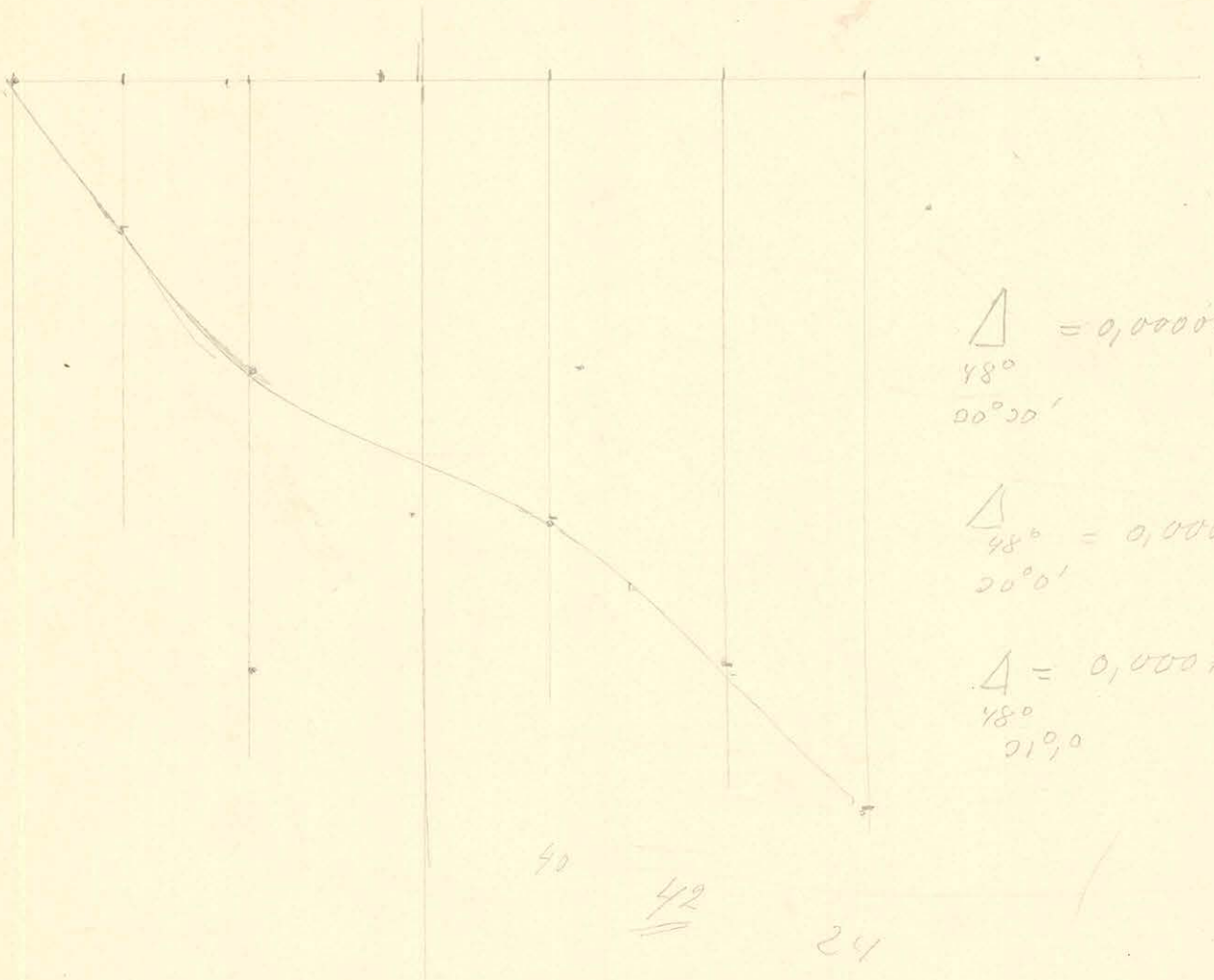
Δ $\lambda = 30^\circ 0'$ $\varphi = 47\ 30$ $= 0,000068$

$\varphi = 7^\circ 30'$ és $\lambda = 30^\circ 0'$ átmenő

Delinatió görbe



$\varphi = 48°0'$ és $\lambda = 20°30$ in ähnlich
Declinationsgröße.

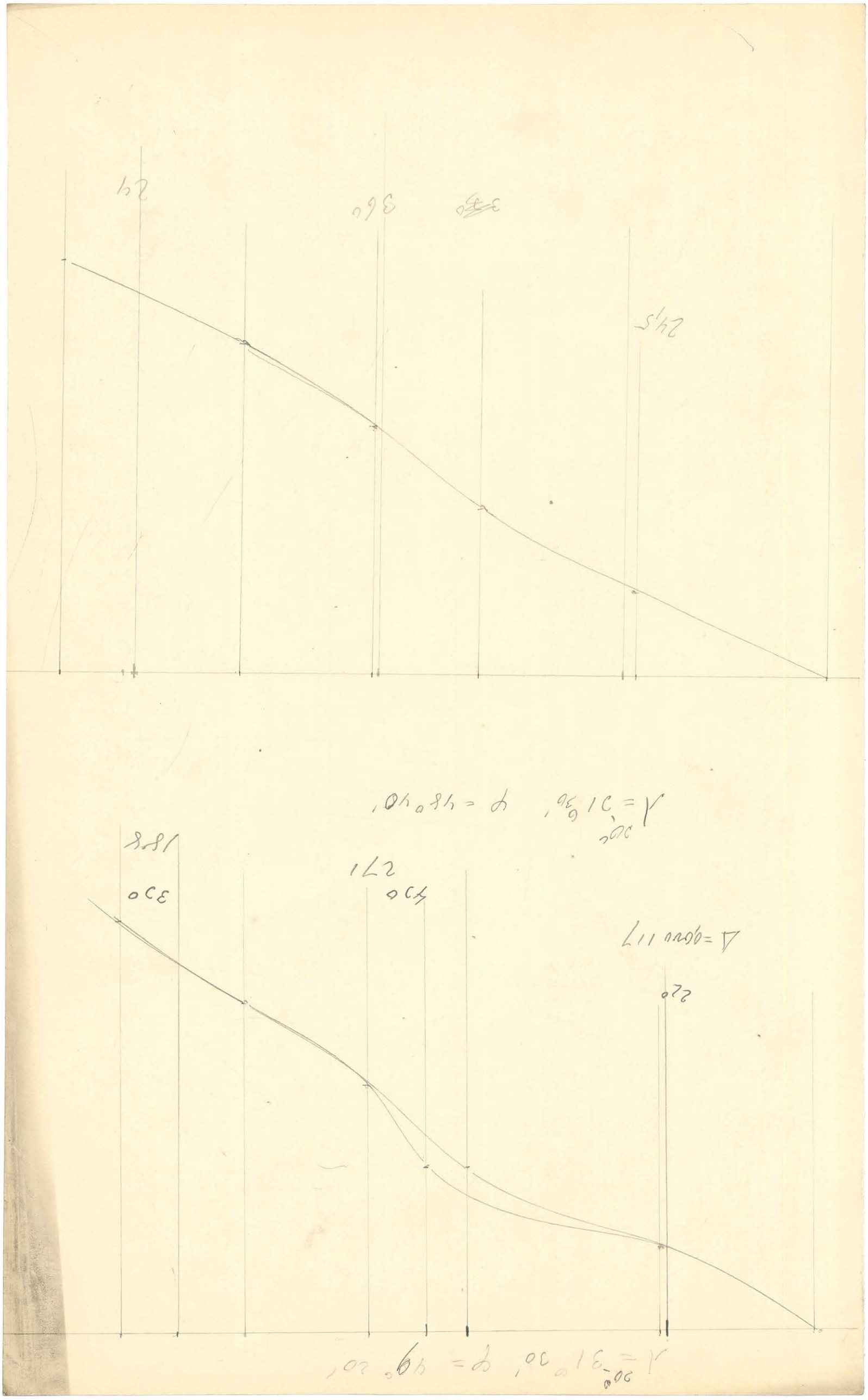


$\Delta_{\substack{48° \\ 20°30'}} = 0{,}000065$

$\Delta_{\substack{48° \\ 20°0'}} = 0{,}000174$

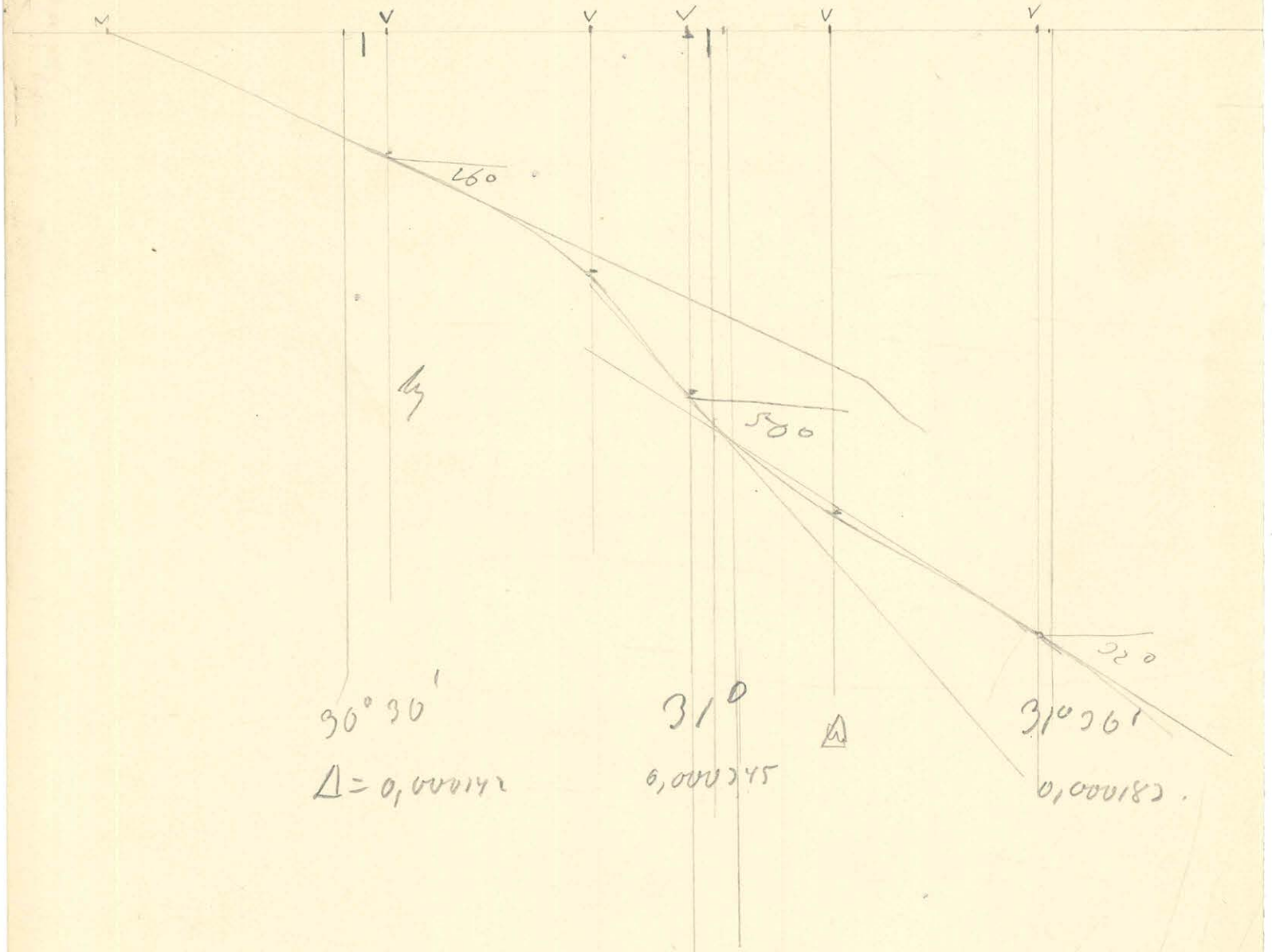
$\Delta_{\substack{48° \\ 21°,0}} = 0{,}000122$

40 42 24



$\varphi = 49^\circ$ $\lambda = 21^\circ$ on ekvator

Deklinatió görbe



$\lambda = 30°$

$l = 29°$

φ	δ	h	c	α	$\frac{H}{h}$	β	Δ
50° 30′	15° 45′	1,857	0,000235				
50°	15° 42′	1,878	0,000231				
49° 45′	15° 42′	1,890	0,000229				
49° 30′	15° 42′	1,898	0,000227				
49° 15′	15° 41′	1,911	0,000225				
49°	15° 38′	1,920	0,000223				
48° 30′	15° 35′	1,939	0,000219				
48°	15° 26′	1,961	0,000215				
47° 30′	15° 22′	1,984	0,000211				

$\lambda =$	$\varphi = 50^\circ 30'$	50°	$49^\circ 45'$	$49^\circ 30'$	$49^\circ 15'$	49°	$48^\circ 30'$	48°	$47^\circ 30'$
$\log \frac{H}{\lambda}$									
$\log \lg i$									
$\log \frac{H}{\lambda} \lg i$									
$\log \cos\alpha$									
$\log \frac{H}{\lambda} \lg i \cos\alpha$									
$\frac{H}{\lambda} \lg i \cos\alpha$									
$\log \frac{H}{\lambda} \lg i$									
$\zeta \sin\alpha$									
$\zeta \frac{H}{\lambda} \lg i \sin\alpha$									
$\frac{H}{\lambda} \lg i \sin\alpha$									
$\log \gamma$									
$\log \cos^2 i$									
$\log \gamma \frac{1}{\cos^2 i}$									
$\zeta \cos\gamma$									
$\zeta \frac{\gamma}{\cos^2 i} \cos\gamma$									
$\frac{\gamma}{\cos^2 i} \cos\gamma$									
$\zeta \frac{\gamma}{\cos^2 i}$									
$\zeta \sin\gamma$									
$\zeta \frac{\gamma}{\cos^2 i} \sin\gamma$									
$\frac{\gamma}{\cos^2 i} \sin\gamma$									

	20	10	+ 0	50	40	30	15	0	45	+ 30
lg $\frac{\alpha}{4}$	2,32838	2,34830	2,46982	2,67210	2,37658	2,34830	2,32838	2,40824	2,63247	2,55630
lg sin(α-δ)	0,94030-2	0,71880-2	0,35209-1	0,01923-1	0,62592-1	0,64184-1	0,68557-1	0,46594-1	0,24186-2	0,24186-2
lg S	1,26868	1,06710	1,82191	1,69133	2,00250	1,99014	2,01395	1,87418	0,87533	0,79816
Wahr	- 19	- 12	+ 67	- 49	- 101	- 98	- 103	- 75	- 75	+ 6.
lg $\frac{\alpha}{4}$	2,32838	2,34830	2,46982	2,67210	2,37658	2,34830	2,32838	2,40824	2,63247	2,55630
lg cos(α-δ)	0,99834-1	0,99940-1	0,98872-1	0,99761-1	0,95728-1	0,95366-1	0,94182-1	0,98066-1	0,99593	0,99993
lg S.	2,32672	2,34770	2,45854	2,66971	2,33386	2,30196	2,27020	2,38880	2,63340	2,55623
Wahr	- 212	- 223	- 287	- 467	- 216	- 200.	- 186	- 245	- 430	- 260

$\frac{10}{11}$ 3

$\frac{3}{18}$ $\frac{9}{11}$ $\frac{13}{11}$ 115.

lg c

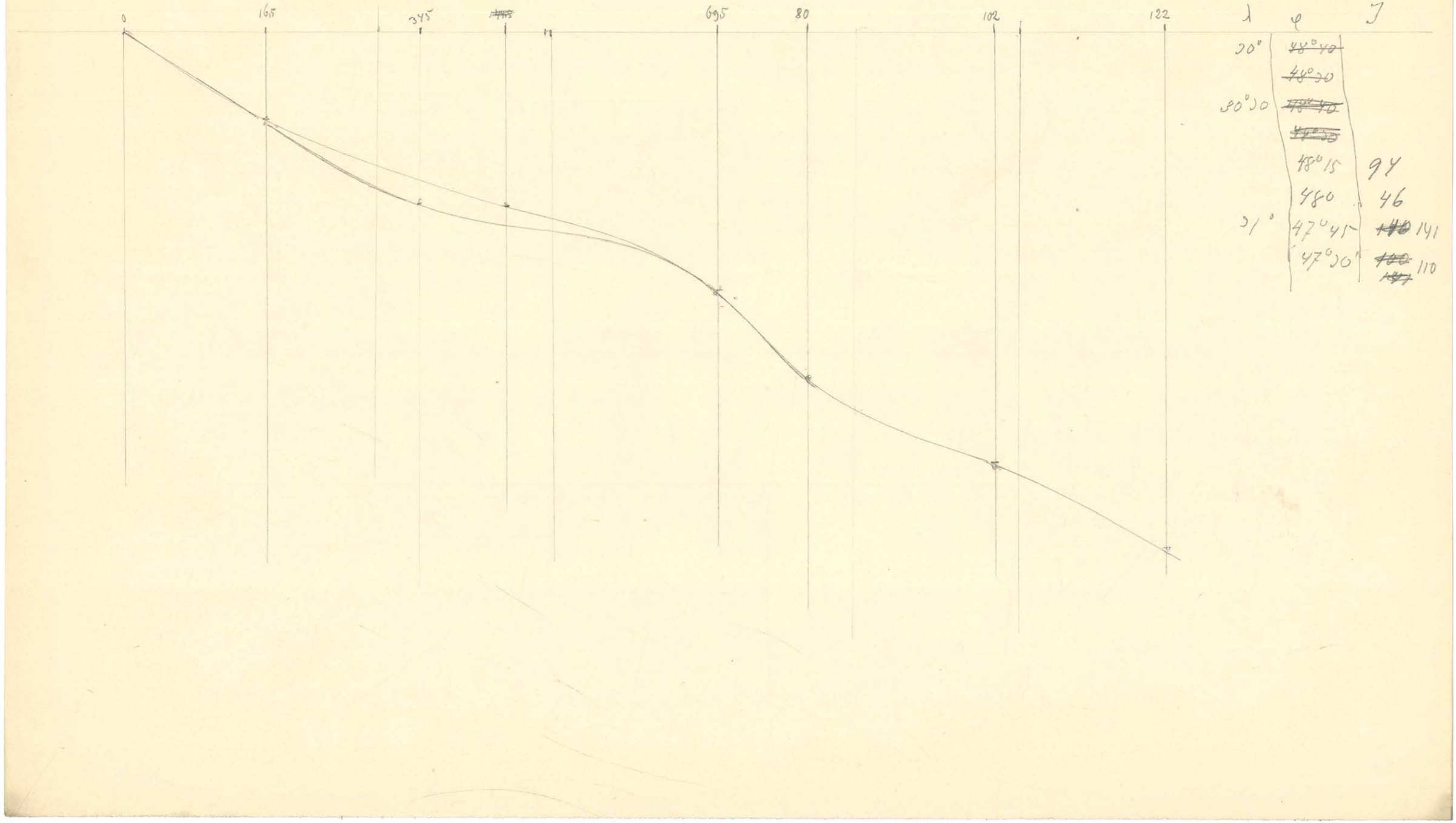
2,35218
41000-1
1,76518
58.

2,32428
41000-1
2,73728
55

2,35218
98494
2,33712
217

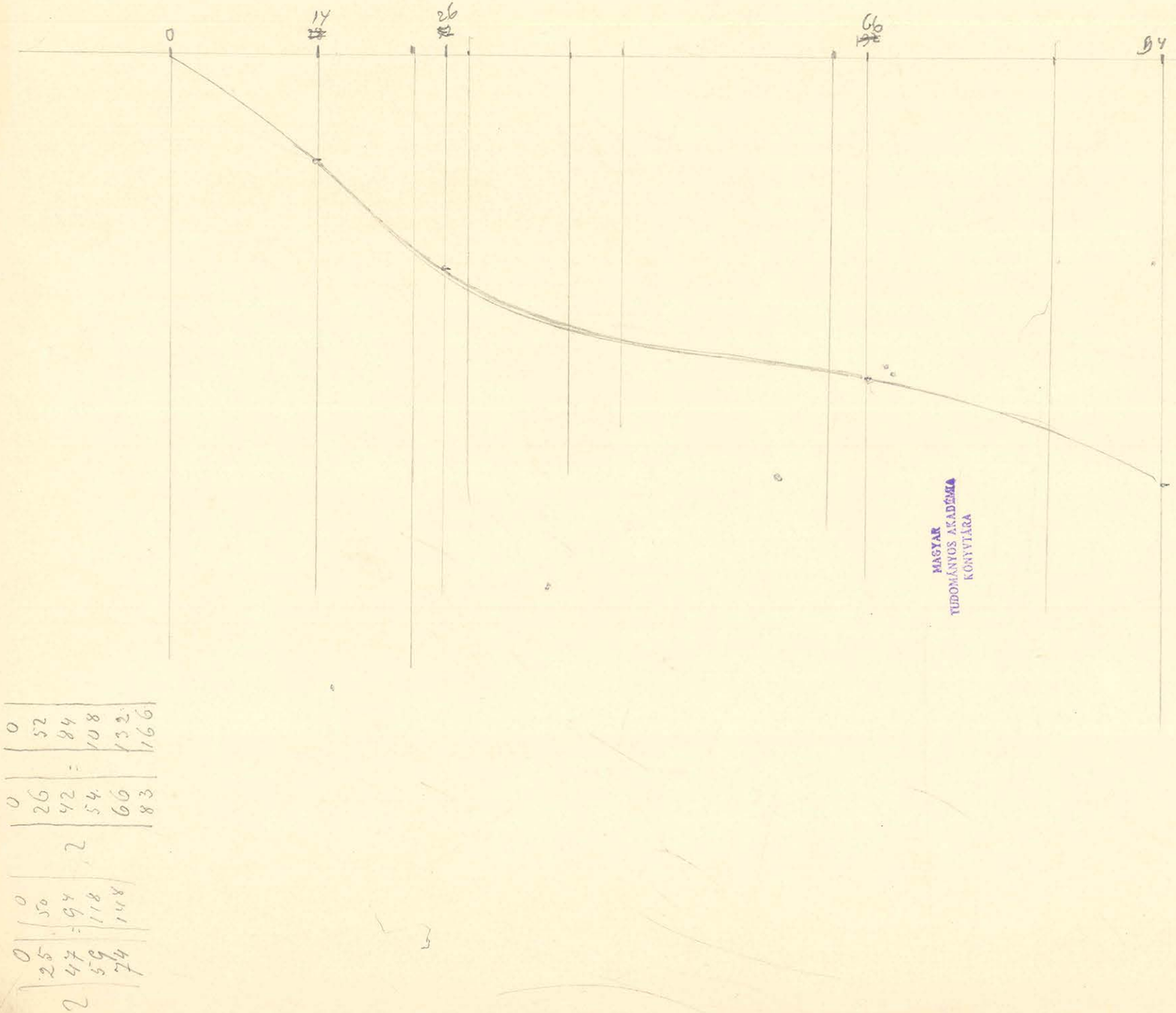
2,32428
98494
2,30922
204.

Inclinatio görbe $\varphi = 48°15$ és $\lambda = 20°20'$ m.s.l.



λ	φ	J
20°	~~48°40~~	
	~~48°30~~	
20°30	~~48°20~~	
	~~48°15~~	
	48°15	94
	48°0	46
21°	47°45	~~140~~ 141
	47°30	~~130~~ 110
		~~147~~

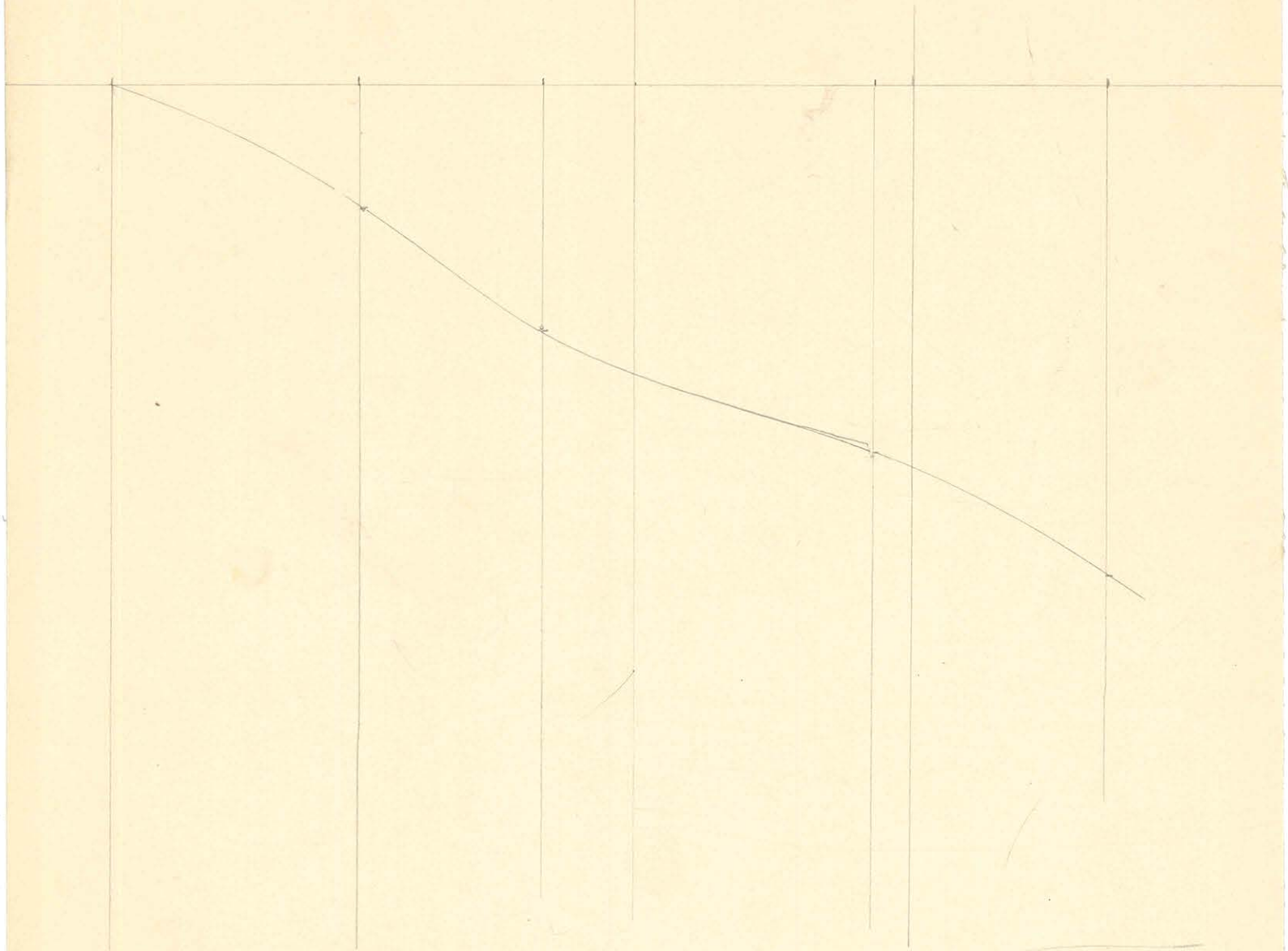
$\varphi = 48°30$ és $l = 31^m$ alatti Inclinatórium.



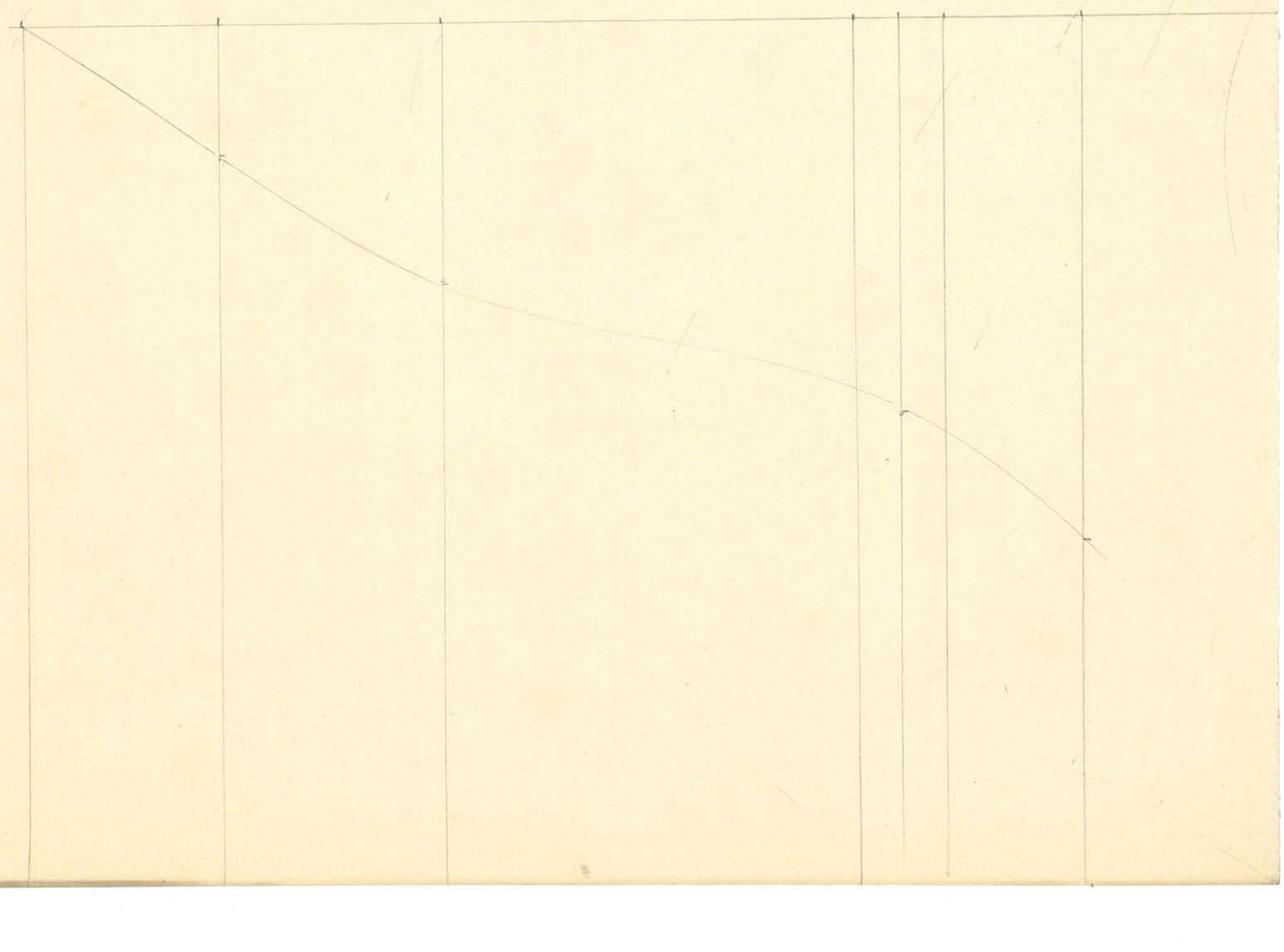
l	φ	
30°	48°30	145
31°30'	48°	100
31°30	48°30	73.
	48·15	96.

0	0	2	0	0	
25	50		26	52	
47	94		42	84	
59	118		54	108	
74	148		66	132	
			83	166	

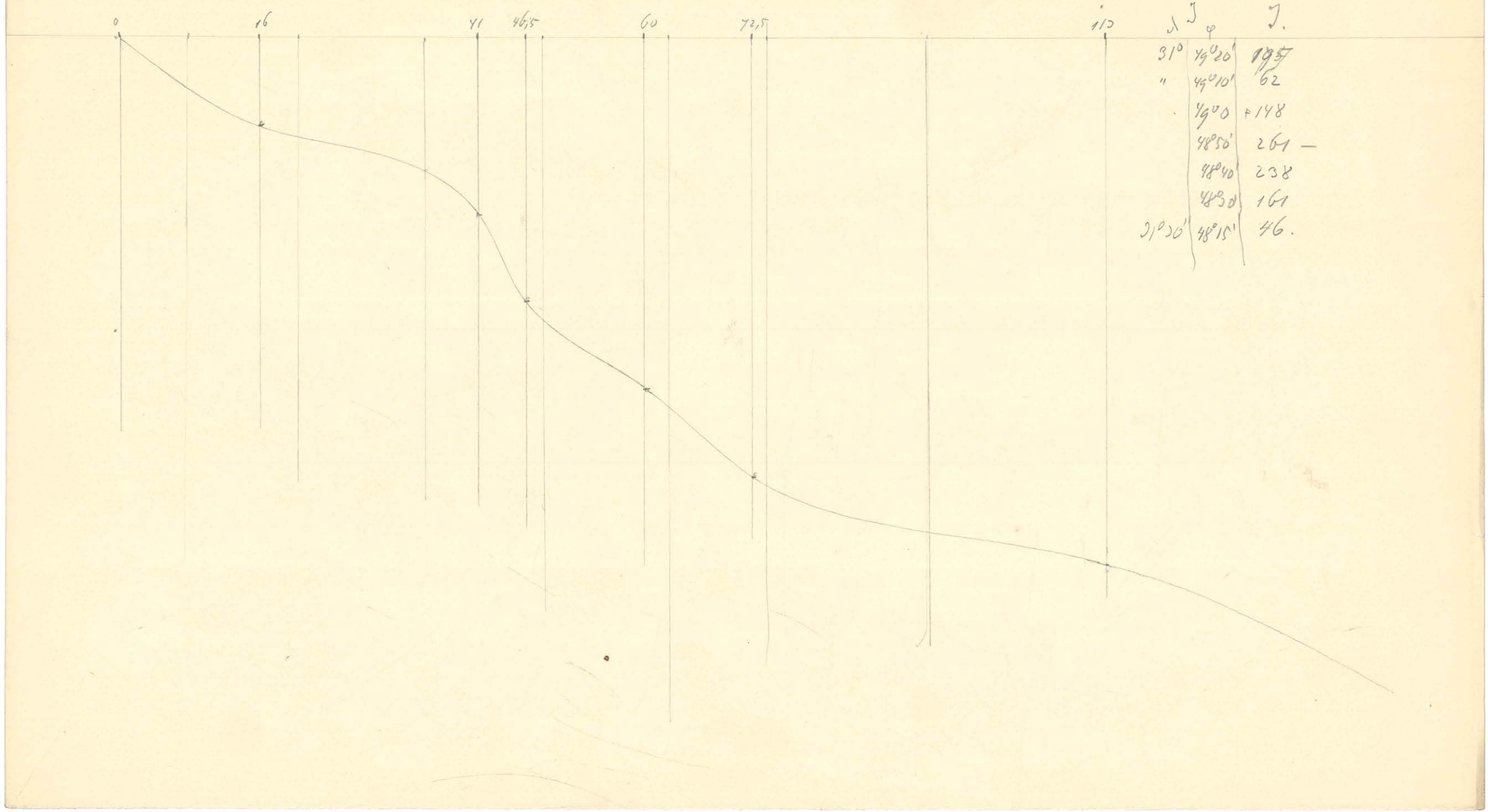
$\varphi = 48°$ $\lambda = 30°$



$\varphi = 48°$ $\lambda = 31°$



Izoklinotní čára Greenwichu [illegible] $\lambda = 21^\circ$ a $\varphi = 48^\circ 50'$ na sever



λ	φ	J.
31°	49°20'	~~195~~
"	49°10'	62
	49°0	+148
	48°50'	261 —
	48°40	238
	48°30	161
21°30'	48°15'	46.